

Yorkshire Philosophical Society.

ANNUAL REPORT

FOR

MDCCCXCVII.



S. 403. - A 8

ANNUAL REPORT
OF THE COUNCIL
OF THE
YORKSHIRE
PHILOSOPHICAL SOCIETY

FOR

MDCCCXCVII.

PRESENTED TO THE ANNUAL MEETING,

FEBRUARY 7th, 1898.



YORK:
COULTAS & VOLANS, PRINTERS, KING STREET.
1898.

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OF
THE YORKSHIRE MUSEUM.
APPOINTED BY ROYAL GRANT.

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EDWIN GRAY, LL.M.

WILLIAM LAWTON.

T. S. NOBLE.

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OF THE

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MINERALOGY - - - - -	W. H. HUDLESTON, M.A., F.R.S.
COMPARATIVE ANATOMY - -	T. ANDERSON, M.D., B.Sc.
ORNITHOLOGY- - - - -	J. BACKHOUSE, F.Z.S., M.B.O.U.
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KEEPER OF THE MUSEUM.

HENRY MAURICE PLATNAUER, A.R.S.M., B.Sc.

REPORT OF THE COUNCIL
OF THE
YORKSHIRE PHILOSOPHICAL SOCIETY,
FEBRUARY 1ST, 1898.

THE past year has not been marked by any great changes or striking events, as far as the internal history of the Society is concerned. The usual work has proceeded steadily; a Lecture list of high average excellence has attracted large audiences—larger indeed, in some cases, than could be comfortably seated in our lecture theatre—and has given much satisfaction; the plan of holding the monthly meetings of the Society late in the afternoon and having a paper of general interest read at each has been pursued throughout the year with marked success. The work done in various departments of the Museum will be dealt with in the special reports which follow; it will be sufficient here to say generally that all of them exhibit healthy vitality.

Turning to the financial condition of the Society, the prospect is an encouraging one. The income of the Society from ordinary sources for the year was £1,168 18s. 8d. This is £2 6s. 6d. less than last year's income, but the diminution is due partly to a falling off in the gate-money—a falling off necessarily connected with the Jubilee rejoicings of the year—and partly to the fact that the Society no longer derives any rent from the Bootham and Marygate towers. The expenditure of the Society was £1,141 14s. 5d., leaving an excess of income over expenditure of £27 1s. 3d. This added to the £71 10s. 8d. in the hands of the Treasurer at the end of 1896 leaves the sum of £98 11s. 11d. in hand.

Our losses during the past year have been considerable. We shall only mention in particular Mr. William Walker and Mr. Geo. C. Dennis.

Mr. William Walker, F.G.S., was the senior vice-president of the Society, and for many years had taken a deep interest in its affairs. He was mainly instrumental in securing the present improved approach from Museum Street to the Society's grounds, and the erection of the Lodge.

Mr. G. C. Dennis rendered great services to the Society both as a member of Council and as Honorary Curator of Entomology. During his life time he enriched the collections under his care by several valuable donations, notably a collection of noxious insects, and at his death he bequeathed to us his excellent collection of Lepidoptera.

The Society has further lost 9 members by death and 30 by resignation, but these losses have been more than counter-balanced numerically by fresh accessions of members.

The Council desire to place on record the loss the Society has sustained by the removal from York of Mr. James Edward Clark, B.A., B.Sc., for many years the indefatigable Curator of Meteorology, who enriched our reports with so many valuable papers. The Rev. W. Johnson, B.A., Head Master of Archbishop Holgate's School, has kindly undertaken the duties of the office thus vacated.

The following Lectures have been delivered in the Museum during the year:—

Thursday, February 4th. — “Majorca” (illustrated by Lantern Pictures). By G. E. Thompson.

Thursday, February 18th,—“Albrecht Dürer” (with Lantern Illustrations). By J. W. Rowntree.

Thursday, March 4th.—“Pioneers of the Telescope” (with Lantern Illustrations). By H. Dennis Taylor.

Thursday, March 18th.—“Peaks, Passes and Glaciers” (illustrated by Lantern Pictures). By Tempest Anderson, M.D., B.Sc.

Thursday, April 1st.—“A Holiday in Brittany” (illustrated by Lantern Pictures). By the Rev. T. Gough, B.Sc.

Thursday, April 8th.—“The Nature of Explosions.” By Harold B. Dixon, M.A., F.R.S., (Professor of Chemistry in the Owens College, Manchester).

Thursday, October 7th.—“The Alphabet” (with Lantern Illustrations). By H. M. Platnauer, B.Sc.

Thursday, October 21st.—“The Story of Mont Blanc” (with Lantern Illustrations). By C. E. Matthews, J.P., F.R.G.S., (sometime President of the Alpine Club).

Thursday, November 4th.—“Adriatic Borderlands” (illustrated by Lantern Pictures taken by the Lecturer). By Paul Lange, Ex-President of the Liverpool Amateur Photographic Association.

Thursday, November 18th.—“Widdrington’s *Analecta Eboracensia*” (with Lantern Illustrations). By the Rev. Cæsar Caine, F.R.G.S.

Thursday, December 2nd.—“Wolfgang Amadeus Mozart.” By Miss M. Paget, A.R.C.M., L.R.A.M., (with Musical Illustrations by Miss C. A. Bigge, A.R.C.M., Miss Knocker and Mrs. Burrell).

Thursday, December 16th.—“Sport in Southern India.” By Lord Wenlock.

The Council wish to record their special appreciation of the kindness of those ladies and gentlemen who have so generously placed their services at our disposal without any further acknowledgment than the payment of their travelling expenses—some of them came long distances, such as from London, Birmingham, and Liverpool. The Council would most willingly ask their acceptance of suitable fees, but as long as the large sum of £198 per annum is required for payment of principal and interest of their debt they see little prospect of being able to do so.

Besides the ordinary lectures to members of the Society the Council have allowed the use of the Museum, on favourable terms, to the following Societies:—

The York University Extension Society have held two courses of lectures on Monday afternoons and evenings on subjects connected with biology. These have been largely attended.

The York Medical Society held their Annual Meeting in the theatre of the Museum on October 13th, when Dr. Goodhart, of Guy's Hospital, delivered an oration of much interest on "Man and Medicine" to a large audience.

The Yorkshire Dialect Society held its first meeting in the Museum on September 25th, 1897, under the Presidency of The Marquis of Ripon, K.G.

The York and District Field Naturalists' Club holds its monthly meetings in the Museum.

All the above Societies aim at the pursuit of objects cognate with those of the Philosophical Society and the Council has had pleasure in assisting them by the use of its premises, but it must not be forgotten that union is strength, and the Council is of opinion that some of these Societies would more fitly be worked as sections of this Society, appointing their own officers but meeting within the walls of, and contributing to the transactions of, the Parent Society.

The Lecture Theatre, though holding above 200 persons, has on several occasions been found inadequate to comfortably accommodate the audience. The Council would willingly undertake the question of a more commodious theatre at one end of the building, and appropriate the present theatre to other purposes, but are deterred by questions of expense.

The Society had some years ago a debt of £3,500, and arrangements were made with the Yorkshire Insurance Co. to extinguish this by an annual payment of £198 for 30 years to pay off both principal and interest. This annuity has still 16 years to run, and the principal has now been reduced to £2,466. It is estimated that a sum of £2,500 would be required to build a satisfactory new theatre, for the payment of which, and the redemption of the debt, a sum of nearly £5,000 would be required. Four per cent. on this would be £200, or practically what we are paying at present. It is believed that many persons find difficulty in safely investing their money to pay 4 per cent. during their life and care comparatively little what becomes of it after their death. Some would willingly see it applied during their life to objects in which they take an interest, provided they could do so without loss of present income. One of our number has offered £1,000 on these

terms provided the whole sum be raised, and another friend, a lady, will also advance £200.

The legacy of £1,000 under the will of the late Mr. Rawdon is expressly directed to be invested. It will scarcely produce much more than £25 per annum, whereas if it could have been applied to the reduction of the debt, the relief to the finances of the Society would have been much greater. If, however, it could have been applied according to some such scheme as above, it would have been still more advantageous to the Society, and Mr. Rawdon could have had the satisfaction of seeing it so applied in his lifetime.

The Council earnestly appeal to those interested in the Society to assist them in furthering some such scheme.

The Council recommend Mr. Richard Thompson as Vice-President in the place of Mr. William Walker, deceased; and the following gentlemen as members of Council in place of those who retire by rotation:—Rev. W. Howarth, Jas. Ramsay, M.D., Jno. Teasdale, M.A., Oxley Grabham, M.A.; and the following gentlemen as honorary members, Mr. J. E. Clark, Sir James Creighton Browne, Mr. Harrison Broadley.

ARCHÆOLOGY.—Antiquities continue to be added to the collections in considerable number, the following additions are specially deserving of note—a stone coffin (Roman) found on the Mount and presented by Mr. Brett, and a series of Late Celtic remains from the so-called “Danes’ Graves” presented by Mr. Harrison Broadley and Mr. J. R. Mortimer. A paper by the last-named gentleman describing the latter relics will be found in the second part of this Report.

GEOLOGY.—The Honorary Curator of Geology reports that during the past year the valuable collection of Muschelkalk fossils, presented to the Society by Herr Dr. Pfarrer Engel, has been arranged and placed in the collection. Dr. Engel has given some more fine specimens of *Ceratites*. The Hon. Curator has added to the Jurassic series of brachiopoda several species of *Rhynchonella* from Gloucestershire which were not represented in the collection. Mr. P. C. Hawkins has presented a block of fossiliferous sandstone found on the Mount,

York. The Hon. Curator hopes to make some progress in re-labelling the Yorkshire fossils during the year.

MINERALOGY.—Very few alteration or additions have been made in the Department of Mineralogy during the past year. A small number of minerals have been incorporated in the collection, which is now in a fair way towards completion. Indeed, there is very little left to be done in this Department beyond the replacement, as opportunities occur, of inferior specimens for better ones. It might also be advisable to form small subsidiary collections for the purpose of illustrating special features in minerals.

COMPARATIVE ANATOMY.—The only addition made to this Department during the past year consists of the bones of a Rhinoceros shot in Burmah. This skeleton is a very important addition not only zoologically—from the fact that the animal is the sole representative of Natural Order—but also geologically. Rhinoceros bones have been discovered in various parts of Yorkshire, proving that the animal lived in our county up to geologically recent times. It was therefore considered so advisable to have a recent specimen—especially a sound one of known history—for comparison with semi-fossil remains, that the opportunity of acquiring one at a moderate price was gladly taken.

ORNITHOLOGY.—The Honorary Curator reports that the collections in this Department are in a satisfactory condition, and that nothing of special note has been added.

ENTOMOLOGY.—This Department has suffered a severe loss by the death of the Hon. Curator, Mr. G. C. Dennis, who greatly improved the collections by his work. At the time of his death he was engaged in making a representative collection of Trichoptera for the Museum. His legacy of a valuable Cabinet of Lepidoptera, containing many larvæ, is another instance of his good will to the Society.

LIBRARY.—The chief feature of this Department is its rapid and continuous growth—a characteristic which we could view with more un-mixed satisfaction if it was accompanied by a proportionate increase in the space at our disposal. As it is,

the efforts of the Librarian are severely taxed to find space for the additions that pour in. The work of cataloguing, left untouched since the departure of the Rev. John Hey, is now being resumed.

METEOROLOGY.—No one feature during the past year calls for special comment.

Temperature was a fraction of a degree lower than in 1896, although again above the mean and, as usual, half a degree above the mean average of 9 a.m. and 9 p.m. February and November were unusually warm, May and September the coolest for the time of the year. The summer months were warm and fine up to mid August, and so favoured all but late harvesting. Frosts were very slight, the minimum being above 20° in January and only 25° in December. On the other hand over 80° was touched in each summer month. The maximum was 88° before a heavy thunderstorm on August 5th, the hottest day since August 1876. Then, and in July 1873, 89° were recorded; 88° was also recorded in July 1876 and June 1878; also 87.5° in July 1852.

Mean Pressure hardly differed from that for our fifty years of comparison, 1841—1890. The greatest monthly divergences were in March (low), October and November (high). The extremes give a range of 2.233 inches, which is more than usual, although much less than in 1896.

Bright Sunshine has now been registered for 17 years for your Society by the Stokes Recorder at Bootham School. The total, 1,464 hours, has been exceeded only in 1893 (1,595 hours) and 1895 (1,488 hours). May, July, and August were all brilliant months, with totals exceeding 200 hours. Altogether this has occurred six times in May, once in June, three times in July, and once in August. In every way May proves itself the sunniest month in the York Calendar.

Rain or Snow (0.005 inches or over) fell on 194 days, or 24 above the average. Yet the total fall is slightly below the average. July and October were dry; the August fall was excessive. Only seven thunderstorms are recorded against 23 last year. Snow came on 24 days, all but three in the earlier months,

August and April have this year drawn away from their respective second and third in the neck and neck race for wettest and driest months. The cumulative totals from 1841 now stand at, August, 155·19 inches; October, 152·55; July, 150·60. For driest we must handicap to a 30 day month, which gives April, 90·17; March, 90·75 (actually, 93·78); and February, 91·13 (actually, 85·91). A single year may reverse the order of the latter set, and the exchange of the 1897 July and August falls would have reversed the former. If the relationship previously noted between rainfall and sunspots is continued, we may expect wetter Julys and Augusts, and drier Octobers during the next 3 or 4 years.

Floods of eight feet and over were more frequent, being recorded on February 9, 10, 11, 26, 27; March 18, 19, 20; December 8, 9, 17, 18. Ten feet five inches was touched on February 10th. Comparing the tables from up river with the self-recording flood gauge at York, the data based on the two previous years' returns seem to be confirmed. We thus get that it seems to require 22 hours for floods to come down the Nidd from Pateley Bridge (on 9 observations, against 22 hours on 7); 20½ from Middleham-on-the-Ure (40, against 20 on 28); and 22 from Richmond-on-Swale (19, against 21 hours on 10 observations). Until recording instruments are placed at the higher stations it seems useless to attempt closer analysis of the returns. But these are enough to show what advantage would accrue by timely warnings.

Auroras showed a further diminution, being recorded on nine nights in the earlier months against ten last year, eleven and twenty-three in the preceding. The monthly numbers were 2, 1, 4, 2. Observations for these and for *Clear Days* ceased with July. These latter were as usual tested by the visibility of the West Riding Hills from Feversham Terrace, Bootham Stray. There was a considerable decrease on the whole, but May was unusually clear.

The *Gala Day Gale*, June 16th, which ruined the flower tents and their contents, will long be recalled as one of the most destructive summer gales ever experienced in the district, if not unprecedented in living memory.

BOTANY.—The list of additions to this Department will be found on page xxxii. The valuable gift of the two books which belonged to the Rev. James Dalton, F.L.S., is due to the kindness of Mrs. S. E. Portman Dalton. Both books contain numerous annotations and coloured figures of plants which are of great interest to Botanists. In the volume of Galpine's "Compendium" there is the following note in Mr. Dalton's handwriting: "June 21st, 1827. Gave my Herbarium and Coleopterous insects to the Philosophical Society of York. James Dalton." This interesting record confirms the date mentioned in the Report for 1893 (page 36). Although seventy years have elapsed since the Society acquired the Herbarium, it is satisfactory to know that it is in good preservation, and that its value will be increased by the addition of the books referred to. The catalogue of British plants in the Herbarium which has appeared in the Reports for 1894, 1895, 1896 only represents about a tenth part of the collection, and as the majority of the specimens have come from Mr. Dalton or his relatives, it will be seen that this Society has been highly favoured. As the arrangement of the specimens proceeds, a better knowledge of Mr. Dalton's botanical work will be obtained. In the meantime the following prefatory remarks regarding the distinguished Naturalist may be found interesting.

James Dalton was born in Swinegate, York, on the 14th November, 1764. His father, Captain John Dalton, H.E.I.C.S., (the gallant defender of Trichinopoly, 1752-53,) was one of those enterprising and heroic pioneers who laid the foundation of our commercial and political influence over the vast Indian Empire. His mother was second daughter, and eventually heiress, of Sir John Wray, 12th Baronet of Glentworth, County Lincoln. James Dalton took his B.A. degree at Clare Hall, Cambridge, in 1787, and M.A. in 1790. On the 22nd January, 1789, he was appointed Vicar of Copgrove, near Knaresborough, and from this district he recorded many rare and interesting plants, one of which, *Scheuchzeria palustris*, is especially worthy of notice. This rare plant was first found in Britain by Mr. Dalton, (in 1787,) at Leckby Carr, near Topcliffe, Yorkshire. Owing to the drainage of the Carr and

growth of trees it is now extinct in its original habitat. It will therefore be seen that the specimens in the Herbarium are of great interest to Botanists. From Copgrove Mr. Dalton went to Catterick (1791), thence to Croft, where he was Rector from 1805 to his death, January 2nd, 1843. He was buried at Croft, January 12th, 1843. Mr. Dalton found Croft a convenient centre for investigating the Flora of Upper and Lower Teesdale. In connection with the latter district, the construction of the Stockton and Darlington Railway (1825), the discovery of the mines containing iron ore in the Cleveland Hills (1850) and their subsequent development, have altered the surface of many parts of Lower Teesdale. For the possession of many rare specimens, such as the one previously mentioned, the Society is indebted to Mr. Dalton and his contemporaries. Among the latter mention may be made of Robert Teesdale, Colonel Machell, R. K. Greville, Dr. Goode-nough (Bishop of Carlisle), Sir James E. Smith (founder and P.L.S.), Sir W. J. Hooker, &c.

PHOTOGRAPHIC SECTION.—The Meetings of this Section have been held regularly and the work has gone steadily forward. An increase of membership is, however, much to be desired. At all meetings of the Section, subjects are brought forward and discussed which would be both interesting and useful to Amateur Photographers.



STATION, YORK.—THE MUSEUM.

Longitude 1° 5' W., Latitude 52° 57' N. Height above Mean Sea Level 56 feet. Gravity Correction + .024 in.

1897.	Highest Barometer.	Lowest Barometer.	Mean Pressure at 32° Fahren- heit at M.S. Level	Air Temperature.						Humidity.													
				9 a.m.	9 p.m.	Mean	Means of			Absolute Min. and Max.			Deprn. of Wet Bulb.			Tension of Vapour.			Percentage.				
							Min. & Max.	Min.	Max.	Min.	Day.	Max.	Day.	Mean	9 a.m.	9 p.m.	Mean	9 a.m.	9 p.m.	Mean	9 a.m.	9 p.m.	Mean
ins.	°	°	°	°	°	°	°	°	in.	in.	in.	°	°	°	in.	in.	in.	°	°	°			
Jan.	2nd, 9 a.m. 30.508	30th, 9 p.m. 29.323	29.911	33.8	34.2	34.0	34.6	30.5	38.6	20.5	24th	48.6	1st	0.4	0.6	0.5	.187	.187	.187	95.3	94.2	94.8	
Feb.	16th, 9 a.m. 30.563	2nd, 9 a.m. 29.276	30.027	40.3	42.1	41.2	41.6	36.9	46.3	26.2	1st	56.0	22, 26	1.1	1.4	1.3	.234	.242	.238	91.5	89.1	90.3	
Mar.	8th, 9 a.m. 30.132	3rd, 8 a.m. 28.576	29.566	42.6	42.4	42.5	43.3	37.5	49.2	26.5	30th	59.0	26th	2.5	2.4	2.5	.225	.223	.224	81.0	81.7	81.4	
April	10th, 6 p.m. 30.291	1st, 9 a.m. 29.173	.859	45.1	43.0	44.1	44.1	36.6	51.5	26.7	1st	65.0	29th	3.7	2.7	3.2	.225	.224	.225	74.2	79.8	77.0	
May	16th, 9 a.m. 30.499	28th, 6 p.m. 29.292	29.969	51.2	47.5	49.4	49.4	40.4	58.5	32.0	12th	68.0	17th	4.9	3.7	4.3	.266	.247	.257	69.5	74.6	72.1	
June	12th, 9 a.m. 30.255	18th, 9 a.m. 29.339	30.012	59.2	57.0	58.1	59.1	50.6	67.5	43.0	10, 17	82.0	12th	4.2	3.1	3.7	.387	.385	.386	76.1	80.9	78.5	
July	11th, 9 a.m. 30.402	5th, 9 p.m. 29.574	29.994	63.0	58.7	60.9	61.0	51.4	70.5	43.0	6th	81.0	30th	6.0	3.9	5.0	.393	.383	.388	68.2	76.7	72.5	
Aug.	3rd, 9 a.m. 30.267	21st, 9 p.m. 29.340	.766	63.5	59.9	61.7	62.2	52.8	71.4	46.0	29th	88.0	5th	5.6	3.7	4.7	.408	.406	.407	69.9	78.7	74.3	
Sept.	14th, 9 a.m. 30.539	2nd, 8 a.m. 29.202	29.946	54.4	53.0	53.7	53.2	45.2	61.2	36.3	9th	68.0	13th	3.7	2.5	3.1	.327	.339	.333	76.9	83.3	80.1	
Oct.	21st, 9 p.m. 30.631	16th, 8 a.m. 29.403	30.159	49.0	48.6	48.8	48.8	41.8	55.8	32.4	14th	66.3	17th	2.1	1.6	1.9	.300	.306	.303	85.5	88.6	87.1	
Nov.	21st, 9 a.m. 30.678	28th, 9 p.m. 28.876	30.148	45.6	45.3	45.5	45.3	40.2	50.5	29.6	16th	59.9	13th	1.3	1.4	1.4	.280	.277	.279	90.5	90.2	90.4	
Dec.	22nd, 9 a.m. 30.709	10th, 9 p.m. 28.876	29.841	39.4	40.4	39.9	40.0	34.7	45.4	25.0	24th	57.0	16th	1.4	1.3	1.4	.220	.229	.225	89.0	88.9	89.0	
Year	Dec. 22nd, 30.709 9 a.m.	March 3rd, 28.576 8 a.m.	29.933	48.9	47.7	48.3	48.6	41.6	55.5	20.5	Jan.	88.0	Aug.	3.1	2.4	2.8	.288	.287	.288	80.6	83.9	82.3	

STATION, YORK.—THE MUSEUM.

Heights above Ground :—Barometer, 3 feet ; Thermometers, 4 feet ; Rain-gauge, 1 foot.

1897.	Amount of Cloud.			Rainfall.			Sunshine Returns.			Weather, No. of Days of								Wind, No. of Observations of									
	9 a.m.	9 p.m.	Mean	Total.	Max.	Day.	Total hours. 1897.	Per-centage. 1897.	Per-centage. 1896.	Rain.	Frosts.	Snow.	Hail.	Thun-der Storm	Clear Sky.	Over-cast.	Gale.	Visi-bility.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.
January	6·8	6·6	6·7	ins. 1·51	ins. ·39	7th	44	18	15	23	27	12	0	0	4	13	0	0	14	5	10	4	8	1	6	11	3
February	7·1	8·4	7·8	1·86	·44	5th	45	17	10	17	15	3	0	0	2	15	2	1	4	1	8	4	9	9	19	2	0
March	7·5	5·5	6·5	2·18	·48	2nd	92	25	26	21	14	4	1	1	1	8	3	6	8	1	7	6	16	2	20	2	0
April	6·0	4·5	5·3	1·66	·26	9, 17	148	35	35	17	12	2	1	0	3	5	0	(3)	12	8	10	2	9	5	11	3	0
May	5·5	4·7	5·1	1·20	·31	29th	254	52	38	14	4	0	0	1	3	6	0	28	13	5	6	3	7	4	16	8	0
June	7·2	7·0	7·1	2·45	·61	18th	151	30	36	13	0	0	0	1	1	12	1	13	7	7	12	1	10	6	9	7	1
July	5·6	4·0	4·8	0·75	·30	25th	249	49	32	7	0	0	0	1	6	5	0	15	6	5	5	4	5	4	23	10	0
August	5·0	4·6	4·8	4·01	1·03	30th	223	49	23	21	0	0	1	2	5	4	0	0	5	1	9	7	19	5	14	2	0
September	6·2	6·2	6·2	2·76	·44	28th	127	34	19	13	0	0	1	0	4	9	1	0	14	1	4	3	9	4	15	7	3
October	6·2	5·6	5·9	1·76	·56	2nd	90	28	21	13	10	0	0	0	4	11	0	0	1	6	5	9	15	4	11	4	7
November	8·2	6·5	7·4	2·26	·56	14th	19	7	21	18	12	2	0	1	3	16	1	0	11	6	11	2	13	5	10	0	2
December	7·4	5·7	6·6	2·07	·33	13th	22	10	12	17	13	1	0	0	3	11	1	0	4	0	6	7	32	2	9	2	0
Year	6·6	5·8	6·2	24·47	1·03	Aug.	1464	29·5	24·0	194	107	24	4	7	39	115	9	66	99	46	93	52	152	51	163	58	16

RIVER HEIGHT RECORDS REGISTERED BY THE AUTOMATIC RECORDER
AT THE GUILDHALL, YORK, 1897.

Date.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	Time.	Above or below S.L.	Time.	Above or below S.L.	Time.	Above or below S.L.	Time.	Above or below S.L.	Time.	Above or below S.L.	Time.	Above or below S.L.
1	1 a.m.	ft. in. 4 5	noon	ft. in. 0 7	12 p.m.	ft. in. 2 7	1 a.m.	ft. in. 1 6	12 p.m.	ft. in. 1 1	1 a.m.	ft. in. 0 11
2	"	2 0	"	0 8	noon	3 2	noon	1 4	noon	1 0	noon	0 6
3	"	0 11	"	0 9	11 p.m.	5 6	1 a.m.	1 4	12 p.m.	1 2	"	0 6
4	12 p.m.	1 8	12 p.m.	0 10	1 a.m.	5 6	noon	1 0	noon	1 5	"	0 6
5	5 p.m.	2 11	"	2 5	noon	3 3	1 a.m.	0 11	"	1 0	"	0 6
6	"	2 6	5 p.m.	5 8	"	3 2	noon	0 10	"	1 0	"	0 6
7	6 p.m.	2 2	3 a.m.	5 6	3 a.m.	3 2	"	0 9	"	1 0	"	0 6
8	8 p.m.	4 4	1 a.m.	4 1	6 p.m.	2 7	"	0 8	"	0 11	"	0 9
9	1 a.m.	3 10	12 p.m.	8 6	1 a.m.	2 6	6 a.m.	0 7	"	0 10	"	0 6
10	"	3 6	6 p.m.	10 5	12 p.m.	3 11	noon	1 5	"	0 10	"	0 7
11	12 p.m.	3 1	1 a.m.	10 2	7 a.m.	4 0	"	1 6	"	0 10	"	0 6
12	9 a.m.	3 4	"	5 8	12 p.m.	5 1	12 p.m.	1 6	"	0 9	"	0 6
13	3 a.m.	2 9	"	3 0	6 a.m.	5 6	6 a.m.	1 10	"	0 8	"	0 6
14	noon	2 9	12 p.m.	3 3	1 a.m.	4 0	12 p.m.	2 8	"	0 8	"	0 5
15	6 p.m.	2 1	noon	4 0	12 p.m.	4 6	9 a.m.	3 4	"	0 7	"	0 5
16	"	1 10	1 a.m.	3 4	11 a.m.	5 7	1 a.m.	2 3	"	0 7	"	0 7
17	1 a.m.	1 10	2 p.m.	2 5	12 p.m.	6 10	11 a.m.	5 7	"	0 6	3 p.m.	0 7
18	"	1 6	3 p.m.	2 0	10 p.m.	8 11	noon	4 3	"	0 6	12 p.m.	0 10
19	3 a.m.	1 2	12 p.m.	2 5	1 a.m.	8 9	1 a.m.	3 6	"	0 6	noon	1 0
20	12 p.m.	1 6	3 p.m.	2 8	"	8 7	"	1 9	"	0 6	1 p.m.	2 6
21	3 p.m.	1 9	12 p.m.	3 9	"	5 6	noon	1 5	"	0 6	1 a.m.	1 7
22	1 a.m.	1 9	2 a.m.	4 2	noon	2 10	"	1 5	"	0 6	6 a.m.	2 1
23	2 a.m.	1 6	6 p.m.	1 8	6 p.m.	3 10	2 p.m.	1 5	"	0 6	1 a.m.	1 2
24	noon	1 0	noon	1 6	2 a.m.	3 6	noon	1 2	"	0 6	1 a.m.	1 0
25	"	1 0	12 p.m.	4 0	12 p.m.	5 5	"	1 2	"	0 6	noon	0 9
26	2 p.m.	2 0	5 p.m.	9 2	1 a.m.	5 5	"	1 2	"	0 7	"	0 9
27	12 p.m.	0 10	1 a.m.	8 4	12 p.m.	7 6	"	1 2	"	0 7	"	0 7
28	noon	0 10	"	3 11	4 a.m.	7 8	"	1 2	"	0 7	"	0 6
29	"	0 10	"	"	9 a.m.	5 7	"	1 0	6 a.m.	0 8	12 p.m.	0 7
30	"	0 9	"	"	1 a.m.	3 4	"	0 11	6 p.m.	0 10	3 p.m.	0 11
31	"	0 8	"	"	"	2 0	"	"	noon	0 11	"	"

RIVER HEIGHT RECORDS.—Continued.

Date.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	Time.	Above or below S.L. ft. in.	Time.	Above or below S.L. ft. in.	Time.	Above or below S.L. ft. in.	Time.	Above or below S.L. ft. in.	Time.	Above or below S.L. ft. in.	Time.	Above or below S.L. ft. in.
1	noon	0 7	noon	0 3	5 p.m.	1 4	3 a.m.	1 4	noon	0 8	8 a.m.	4 3
2	"	0 7	12 p.m.	0 4	8 p.m.	3 7	noon	0 7	6 p.m.	0 9	1 a.m.	2 4
3	"	0 6	8 a.m.	0 3	4 p.m.	3 9			noon	0 7	"	1 5
4	1 a.m.	0 5	noon	0 3	1 a.m.	2 9	9 a.m.	1 3	12 p.m.	0 9	"	0 10
5	6 p.m.	0 5	12 p.m.	0 4	6 a.m.	2 7	11 p.m.	1 2	"	0 9	11 p.m.	0 11
6	12 p.m.	0 10	"	1 3	10 a.m.	2 7	1 a.m.	1 2	1 a.m.	0 9	12 p.m.	1 9
7	noon	0 10	6 a.m.	1 4	"	2 7	11 a.m.	1 0	6 a.m.	0 8	noon	2 7
8	12 p.m.	0 10	11 a.m.	0 11	2 p.m.	1 9	noon	0 9	12 p.m.	0 8	11 p.m.	9 4
9	noon	1 0	12 p.m.	0 5	8 p.m.	1 2	1 a.m.	0 9	11 p.m.	1 4	1 a.m.	9 3
10	6 p.m.	1 2	noon	0 5	1 a.m.	1 2	6 p.m.	0 9	1 a.m.	1 4	3 a.m.	7 9
11	1 a.m.	1 1	"	0 5	noon	0 10	11 p.m.	0 11	"	0 10	noon	5 5
12	"	0 8	6 p.m.	0 9	"	0 8	noon	1 1	noon	0 9	1 a.m.	4 10
13	noon	0 5	1 a.m.	0 9	1 a.m.	0 8	1 a.m.	0 9	12 p.m.	4 6	noon	2 1
14	"	0 5	6 a.m.	0 6	noon	0 5	12 p.m.	0 8	2 a.m.	4 8	12 p.m.	5 0
15	1 a.m.	0 5	6 p.m.	0 9	5 p.m.	0 8	"	3 0	10 p.m.	2 10	2 a.m.	5 2
16	12 p.m.	0 3	1 a.m.	0 9	1 p.m.	3 3	6 p.m.	6 2	1 a.m.	2 9	12 p.m.	7 3
17	noon	0 3	6 p.m.	0 8	10 a.m.	3 0	1 a.m.	5 9	12 p.m.	1 8	8 a.m.	8 9
18	"	0 2	11 p.m.	1 0	12 p.m.	0 9	"	2 0	"	2 4	1 a.m.	8 7
19	"	0 2	1 p.m.	1 3	noon	0 9	"	2 1	1 a.m.	2 4	"	6 2
20	"	0 3	1 a.m.	1 1	11 p.m.	0 7	"	1 4	12 p.m.	below 1	"	6 0
21	"	0 4	8 p.m.	3 1	noon	0 8	"	1 0	5 p.m.	3 3	3 a.m.	1 9
22	12 p.m.	0 6	noon	3 1	"	0 7	"	0 10	1 a.m.	1 2	1 a.m.	1 5
23	noon	0 6	1 a.m.	3 1	"	0 8	noon	0 8	8 a.m.	above 0	"	1 1
24	1 a.m.	0 6	12 p.m.	1 2	12 p.m.	1 8	12 p.m.	0 8	9 p.m.	0 10	noon	0 9
25	noon	0 5	10 p.m.	1 9	noon	5 3	noon	0 6	11 p.m.	0 9	6 a.m.	0 9
26	"	0 5	1 a.m.	1 9	1 a.m.	2 8	"	0 6	noon	0 8	noon	0 6
27	"	0 5	12 p.m.	1 2	"	0 6	"	0 6	12 p.m.	0 11	6 a.m.	0 6
28	"	0 5	7 a.m.	1 4	11 p.m.	0 5	11 p.m.	0 8	1 p.m.	2 0	12 p.m.	2 6
29	"	0 5	1 a.m.	1 0	11 a.m.	0 8	noon	0 8	noon	5 0	"	4 0
30	"	0 5	noon	0 9	11 p.m.	1 3	"	0 8	1 a.m.	3 0	noon	8 3
31	"	0 4	2 p.m.	1 4	"	"	"	0 8	"	8	1 a.m.	6 10

HOUSE FLOODS FROM RETURNS TO THE CITY SURVEYOR.
COMPARATIVE TABLE, 1897.

Date.	Nidd at Pateley Bridge.		Ure at Middleham Bridge.		Swale at Richmond.	
	Hour.	Height	Hour.	Height	Hour.	Height
		ft. in.		ft. in.		ft. in.
Feb. 9	4-30 p.m.	6 3	noon	9 0	11 a.m.	3 6
" 10	9 a.m.	2 0	7 a.m.	4 0	1-30 p.m.	4 0
" 21			6 a.m.	6 0		
" 25			6 p.m.	10 0	4 p.m.	4 0
" 27			7 a.m.	6 0	7 a.m.	2 0
Mar. 3			7 a.m.	4 0		
" 5			7 a.m.	3 2		
" 10			11 a.m.	3 0		
" 12			7 a.m.	3 0		
" 17			4 p.m.	6 0	4-30 p.m.	3 0
" 18			7 a.m.	6 0	7-30 a.m.	3 0
" 19			9 a.m.	8 0	7 a.m.	3 0
" 25			1 p.m.	5 0	4 p.m.	3 0
" 27			5 a.m.	8 0		
" 28			4 p.m.	5 0		
April 14			11 a.m.	5 0		
" 16			4 p.m.	7 0	2-30 p.m.	3 6
June 18			4 p.m.	2 2	8-30 p.m.	3 0
" 20			6 a.m.	5 0		
July 9			11 a.m.	2 0		
Aug. 6			5 a.m.	3 0		
" 17			4 p.m.	1 11		
" 21			7 a.m.	7 8	5 a.m.	4 0
" 22			5 a.m.	5 0		
Sept. 1			1 p.m.	3 0		
" 2			5 a.m.	6 0		
" 3			6 a.m.	2 10		
" 4			11 a.m.	4 1	9 a.m.	2 6
" 6			4 p.m.	3 3		
" 24			5 p.m.	8 0	6 a.m.	3 0
Dec. 8	2 a.m.	5 6	3 a.m.	11 3	7-30 a.m.	3 0
" 9			4 p.m.	7 0		
" 10			4 p.m.	4 0		
" 13					6 a.m.	3 0
" 14			7 a.m.	5 6		
" 16			1 p.m.	9 0	12 a.m.	3 6
" 17			11 a.m.	6 10		
" 29			1-59 p.m.	11 0	5 p.m.	4 6
" 30			8 a.m.	6 0		

THE TREASURER IN ACCOUNT WITH THE YORKSHIRE

Dr. INCOME.

	£	s.	d.	£	s.	d.
<i>Subscriptions :—</i>						
Town Members	622	0	0			
Country Members	15	0	0			
Temporary Members '... ..	1	0	0			
Lady Subscribers	60	0	0			
Associates	11	0	0			
Arrears received	14	10	0			
For Keys of Gates	60	16	0			
				784	6	0
<i>Donation :—</i>						
York University Extension Society				2	2	0
<i>Rents :—</i>						
Major Allenby, St. Mary's Lodge	65	0	0			
Mr. Hill, Marygate Baths	40	0	0			
York Amateur Rowing Club	5	0	0			
York and District Field Naturalists Society, less £1 paid to Attendant... ..	2	0	0			
York Waterworks Company... ..	0	1	0			
Corporation of York	2	0	0			
Yorkshire School for the Blind	0	1	0			
York Musical Society... ..	1	4	0			
				115	6	0
Hire of Tent and Tables	8	8	0			
Less expenses of carriage, fixing, &c.	1	11	6			
				6	16	6
Whitsuntide Admission Fees	10	19	0			
<i>Less :—</i>						
Attendants and Police... ..	3	10	0			
Joiners fixing barricades	0	13	0			
				4	3	0
				6	16	0
Meteorological Department				15	12	0
Sale of Catalogues				6	1	6
Sale of Photographs				2	7	6
Sale of Duplicate sets of Labels				0	8	6
Sale of Duplicate Fossils				5	0	0
Bank Interest				11	5	6
Gate Money				206	5	8
Tennis Court				6	11	6

	£1168	18	8
Balance in hands of Treasurer, 31st December, 1897 ...	98	11	11
	£98	11	11
Legacy. Exors. of the late W. F. Rawdon, Esq.	£1000	0	0

Examined and found correct,

J. A. CUNNINGHAME.

EDWIN GRAY, Hon. Treasurer.

PHILOSOPHICAL SOCIETY FOR THE YEAR ENDING 31ST DEC., 1897.

EXPENDITURE.						Cr.								
						£	s.	d.	£	s.	d.	£	s.	d.
Crown Rent ...	...	...	...	...	...							1	0	0
Corporation Rent ...	...	...	...	...	...							19	8	4
<i>Rates and Taxes :—</i>														
Rates and Taxes, Parishes of St. Wilfrid and St. Olave ...									30	18	11			
Waterworks Company's Rate ...									2	5	0			
Gardeners' Licenses ...									2	5	0			
Receipt Book Stamping...									1	9	2			
									<hr/>			36	18	1
Insurance ...	...	...	...	...	...							12	10	0
<i>Salaries and Wages :—</i>														
Mr. Platnauer ...									150	0	0			
Mr. Fielden ...									60	0	0			
Miss Baines ...									42	8	0			
Mr. Guy ...									25	0	0			
Attendants at Museum and Hospitium, viz. :														
Attendant at Museum ...						66	5	0						
Female Attendant at Museum ...						27	16	6						
Female Attendant at Hospitium ...						33	2	6						
						<hr/>			127	4	0			
Gardeners, including temporary labour and extra duty at Gates, etc. ...									104	3	6			
						<hr/>						508	15	6
Yorkshire Insurance Company--Annuity ...												*198	0	4
<i>General Repairs and Expenses :—</i>														
Museum and Hospitium, Additions, Repairs, and Expenses ...									56	9	9			
<i>Gardens :</i>														
General Additions, Repairs and Expenses...						11	4	3						
Asphalting Walks ...						20	0	0						
Tennis Courts ...						17	8	0						
						<hr/>			48	12	3			
<i>Estate :</i>														
Joiners' Work ...						13	5	11						
Slaters' Work ...						4	1	6						
Painting ...						11	1	2						
Smiths' and like work ...						4	5	4						
						<hr/>			32	13	11			
						<hr/>						137	15	11
Library ...	...	...	...	...	...							17	16	11
Lectures ...	...	...	...	...	...							55	17	4
Printing and Stationery ...	...	...	...	...	...							9	8	10
Printing Reports and Postages thereof...	...	...	...	...	...							18	5	4
Printing Communications to Members and Postage of same ...	...	...	...	...	...							9	1	4
<i>Gas, Coal, and Coke :—</i>														
Museum ...									29	9	10			
Gardens ...									13	4	10			
Estate ...									14	18	9			
						<hr/>						57	13	5
Antiquarian Department ...												31	18	5
Meteorological Department ...												15	18	0
Preparing Photographs for Sale...												1	6	4
Sundry Postages ...												8	17	1
Sundries, including carriage of parcels...												1	6	3
						<hr/>						114	17	5
Excess of Income over Expenditure ...												27	1	3
						<hr/>						£1168	18	8
						<hr/>								
Balance in hands of the Treasurer, 31st December, 1896 ...												71	10	8
Excess of Income over Expenditure, 1897 ...												27	1	3
						<hr/>						£98	11	11
						<hr/>								
Invested on Government Security in accordance with terms of Mr. Rawdon's Will ...												£1000	0	0

* On account of an Annuity of £201 8s. 0d. per annum payable until October 1914 inclusive :

Principal repaid £1033 5 7
 „ outstanding 2466 14 5

£3500 0 0

DIFFERENCES IN 1897 FROM MEANS.

Columns 1—6 for fifty years, 1841—90;
7—9 for 10 years, 1881—90 and 10 for 15 years.

	Mean Barometer.	Mean Thermometer.			Rain.	Rainy Days.	Mean Relative Humid'y 1881-90.	Sunshine. (1881—90.)		Visibility 1883—97.
		Min.	Max.	Com- bined.				Hours.	Per- centage.	
Jan.	+ 0.05	— 1.7	— 2.9	— 2.4	— 0.23	+ 8½	+ 3.4	+ 18½	+ 7.4	— 3
Feb.	+ 0.01	+ 3.9	+ 2.8	+ 3.6	+ 0.34	+ 4	+ 0.3	— 8	— 2.5	— 1
Mar.	— 0.31	+ 3.4	+ 2.2	+ 2.7	+ 0.51	+ 7	— 5.1	— 6½	— 1.9	— 1
April	— 0.04	— 1.4	— 2.1	— 1.8	+ 0.05	+ 3½	— 5.0	+ 20	+ 4.4	(— 5)
May	+ 0.02	— 2.5	— 1.1	— 1.9	— 0.61	+ 1	— 6.9	+ 67	+ 14.4	+ 19
June	+ 0.05	+ 1.4	+ 1.5	+ 1.5	+ 0.21	+ 0½	0.0	— 17½	— 3.5	+ 6
July	+ 0.07	— 0.7	+ 2.3	+ 0.8	— 1.91	— 6½	— 7.5	+ 87½	+ 16.9	Actual Means
Aug.	— 0.14	+ 0.9	+ 4.1	+ 2.6	+ 1.32	+ 7	— 8.2	+ 75½	+ 16.5	viii 7.9
Sept.	— 0.02	— 2.6	— 1.2	— 1.9	+ 0.36	— 0½	— 6.5	+ 21½	+ 5.9	ix 6.7
Oct.	+ 0.32	0.0	+ 1.3	+ 0.7	— 0.86	— 4	— 1.0	+ 9½	+ 2.9	x 5.6
Nov.	+ 0.28	+ 3.9	+ 3.7	+ 3.8	+ 0.17	+ 1½	+ 1.4	— 23	— 9.9	xi 1.3
Dec.	— 0.06	+ 1.7	+ 3.1	+ 2.3	+ 0.11	+ 2	— 1.5	— 2½	— 0.5	xii 1.1
Year	+ 0.029	+ 0.6	+ 1.1	+ 0.9	— 0.54	+ 24	— 2.7	+ 241½	+ 2.8	(99)
Actual Value.	(29.933)	(41.6)	(55.5)	(48.6)	(24.47)	(194)	(82.3)	(1464)	(29.5)	+ 38

NEW MEMBERS.—1897.

- Belcombe, F. E., 1, *St. Peter's Terrace*.
 Bethell, Commander, *Middlethorpe Lodge*.
 Boyd, Capt., R.E., *Burton Lane*.
 Challenger, H. L., *Lawrence Street*.
 Chapman, W. J., 7, *Queen Anne's Road*.
 Clegg, Mark, 2, *Grove Park Avenue*.
 Dowell, Wm., *Bootham*.
 Evelyn, W. A., 24, *Micklegate*.
 Gee, W., *Fairlight, Queen Anne's Road*.
 Grabham, Oxley, M.A., *Heworth*.
 Green, Lady, *Nunthorpe Hall*.
 Hawkins, Rev. W. W., 9, *Grosvenor Terrace*.
 Howard, Edward H., *West Villa, Holgate*.
 Hunt, J. H., 18, *Spurriergate*.
 Hurworth, Mrs., *Stonegate*.
 Johnson, Rev. W., *Archbishop Holgate's School*.
 Laughton, F. W., 7, *Grosvenor Terrace*.
 Liddon, Mrs., *Redworth, Clifton*.
 Lloyd, E. T., 26, *Grosvenor Terrace*.
 Lumb, John, *Westward-Ho, Queen Anne's Road*.
 Melhuish, Miss S., B.A., *Mount Vale House*.
 Mills, Miss, 33, *Bootham*.
 Milner, Richard C., 17, *The Mount*.
 Minks, John, 38, *Bootham*.
 Painter, Capt., 13, *St. Mary's*.
 Peters, Arthur, *Rosenlain, Grove Park Avenue*.
 Raimes, Alwyn, 2, *Scarcroft Road*.
 Rowntree, F. H., *The Cottage, St. Mary's*.
 Scott, C., 18, *Queen Anne's Road*.
 Scott, John, 7, *Lord Mayor's Walk*.
 Siltberg, Enoch, 17, *Coney Street*.
 Smith, Rev. G., 9, *St. Mary's*.
 Stoddart, A. K., *Ivy Cottage, Fishergate*.
 Thompson, Mrs. F., 4, *St. James Terrace*.

Walker, Mrs., *St. Catherine's, Clifton.*

Walker, Edward, *St. Saviourgate.*

Walker, S., 15, *Queen Anne's Road.*

NEW LADY SUBSCRIBERS.

Anderson, Mrs., *City Hotel, Lendal.*

Crampton, Miss M. M., 4, *North Parade, Bootham.*

Ellis, Mrs., *Fern Villa, Queen Anne's Road.*

Gray, Miss Emily, 1, *Clifton Green.*

Hammond, Mrs., *Inkersall, Queen Anne's Road.*

Makins, Mrs., *St. Olave's House, Marygate.*

Todd, Mrs., *Bootham Crescent.*

Vance, Miss Elizabeth, 2, *The Esplanade.*

Wilkinson, Mrs. Eason, *Dringhouses Manor.*

NEW ASSOCIATES.

Bousfield, Jas., *Castlegate.*

Hildesheim, Wm., 3, *Nunthorpe Avenue.*

Scheidt, Wm., 3, *Nunthorpe Avenue.*

Watson, H. A., 3, *Museum Street.*

TEMPORARY MEMBER.

Collett, Mrs., 6, *Blake Street.*



DONATIONS TO THE MUSEUM & LIBRARY.

LIBRARY.

BOOKS PRESENTED.	DONORS.
The Quarterly Journal of the Geological Society of London, vol. liii., 1897.	The Society.
The Journal of the Chemical Society of London, vols. lxxi., lxxii., and Abstracts.	
The Report of the British Association for the Advancement of Science, Liverpool, 1896.	The Association.
Memoirs and Proceedings of the Manchester Literary and Philosophical Society, vol. xli., parts 2, 3, 4.	The Society.
The Bulletin of the American Geological Society, vol. xxvii., No. 4, xxix., Nos. 1, 2, 3.	
The 16th Annual Report of the United States Geological Survey, parts 1, 2, 3.	The United States Survey.
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	} Mrs. S. E. Portman Dalton, Fillingham Castle, Lincoln.

GEOLOGICAL DEPARTMENT.

A block of fossiliferous Sandstone found on the Mount, York.	} P. C. Hawkins.
13 Specimens of <i>Rhynchonella ham- pensis</i> , 6 Specimens <i>Rhyn. angulina</i> from the upper Trigonina Grit, Birdlip, and 5 Specimens of <i>Rhyn.</i> <i>sub-obsolata</i> from the Oolitic Marl, Walls Quarry, Stroud.	
	} J. F. Walker, M.A.

ZOOLOGY AND COMPARATIVE ANATOMY.

6 curious Eggs of the Common Plover	Mr. M. R. Bullivant.
An American Black-necked Swan.	Mr. C. J. Leyland.
An American White Pelican, shot in S. Dakota by Mr. A. Melrose.	} Mr. A. Melrose.
A wild Rabbit with abnormal den- tition.	
A Series of Recent Shells dredged off Preston.	} Mr. L. J. Thompson.
A Series of Exotic Butterflies.	
	} Mr. Johnson.
	} Mrs. E. D. Farmer Brighthelm.

A Series of British Bees.	Miss Thoyts, Berkshire.
A Series of Exotic Butterflies from Central South America.	Mr. G. C. Dennis.
Some Recent Oyster Shells from New Zealand.	Rev. Canon Machell.

ANTIQUITIES.

A Series of Remains from a British barrow near Driffeld.	Harrison Broadley, Esq.
A Roman Stone Coffin found on the Mount.	Mr. E. P. Brett.
A Quern Stone.	Mr. Cotsworth.
An old Broad Sword from Nunthorpe.	Mr. P. C. Hawkins.
A Roman Brick Tomb found on the Fulford Grange Estate.	Mr. I. Poad.
A Native Dress from New Zealand.	Rev. Canon Machell.

BOTANY.

Specimens of <i>Verbascum pulverulen-</i> <i>tum</i> , Vill. <i>Suæda fruticosa</i> , Forsk. <i>Staticereticulata</i> . L. from Heacham, Norfolk.	Mr. F. H. Weekes.
<i>Arenaria uliginosa</i> , Schl. from Widdy Bank, Durham, 1897.	Mr. W. Foggitt.
A small Series of Plants from New Zealand.	Rev. Canon Machell.



COMMUNICATIONS.

“THE DANES’ GRAVES.”

In a previous paper on these mounds,* I explained how very important it was that a further examination should be made at the first possible opportunity. I also stated my disappointment at not having been able to obtain permission to open them.

However, it is said “Everything comes to him who waits,” and such has happened in this case.

Through the obliging intercession of J. Travis-Cook, Esq., F.R.H.S., the kind permission of Harrison Broadley, Esq., the present owner of the estate, has been obtained. I was therefore enabled during the first ten days of July, 1897, with the assistance of the Rev. Canon Greenwell of Durham, and Thos. Boynton, Esq., of Bridlington Quay, to make an exploration of sixteen of this group of barrows, for the inspection of the members of the East Riding Antiquarian Society. Most of these mounds are situated near the western corner of “Danes’ Graves” wood, in that portion which belongs to the parish of Driffeld.¹ At this place the mounds, which were arranged, roughly, in lines, appeared to have been the least disturbed by previous explorers.

No. 1.—The first mound opened was 13 feet in diameter and 18 inches in height. Under it was an oval grave measuring 7 feet north and south, by 5½ feet east and west, and 20 inches in depth. At the bottom lay the body of an adult of middle age, laid on the chest and face, the head to the north; the legs were much drawn up and pressed close to the right side; the right arm was doubled in with the hand under the face; the left arm was laid over the body, with the hand under the right elbow. At the right side of the head lay portions² of a

* Read at Driffeld.

¹ In this corner the parishes of Driffeld, Nafferton and Kilham join. (Plate II)

² Pottery has seldom been found in these graves, and when present the vessel is nearly always incomplete.

small flat-bottomed vessel of a dark colour, plain pottery, near to which was placed the leg-bone [*humerus*] of a small pig. Close to the lumbar vertebræ were two pieces of a much-corroded article of iron (fig. 1) with a hole through one end—probably a belt-fastener. The skull is large and broad, and all the bones denote a strong-framed male person.

The mounds Nos. 2 to 10 inclusive adjoined No. 1, and most of them were situated a little nearer to the west corner of the wood. They varied in size from 10 feet to 22 feet in diameter, and from 15 inches to 30 inches in height. The graves were all oval or oblong with rounded corners; and though they varied in size, they averaged about the dimensions of the one first described. Except No. 6, which had been previously opened, they all contained skeletons on the floor of the grave, with legs much drawn up, and in the positions described in the accompanying table (page 8). Of the 8 bodies included in these nine mounds, 6 were adults and 2 were children.

The bodies in Nos. 1, 3, 4, and 10 were accompanied by a small and much-corroded article of iron, more or less resembling fig. 1 (probably dress-fasteners) lying either on the neck, chest, or loins.

The next five mounds were near the south-east corner of the wood, and they varied in size from 15 feet to 33 feet in diameter, and from 16 inches to 3½ feet in height.

No. 11 is the largest mound of the whole group. It contained at the centre an oval grave, pointing nearly north and south, and measuring about 7 feet by 4½ feet. It was only 2 feet in depth. On the floor of the grave lay the much-crushed body of a strong-boned person—probably a female—placed on the left side, with the head to south-south-west, the legs were drawn up to a right angle with the trunk. At the back of the head lay a very beautiful pin (Plate III.), 5 inches long, which had imparted a green stain to the occipital and right temporal bones.

The head of the pin is probably a faithful copy of the wheel of the British chariot. It is skilfully inlaid with white vitreous enamel, placed in a circular groove running round the rim on both sides of the wheel-shaped head. A similar groove, which has also contained enamel, runs nearly round the circumference,

resembling the rubber tyre of a bicycle wheel. Bosses of similar enamel ornament the middle of the spokes and the shoulder of the pin. Very probably the pin had secured the back hair of its owner. Its position at the back of the skull strongly supports this view, while its equally-ornamented sides and edges give additional support to such a use. It has been suggested that the pin may have secured the garment at the shoulder. If so, the collar-bone (*clavicle*) ought to have been stained with the green oxide from the pin, and not the back part of the head. Besides, its shape and ornamentation are less suitable for this purpose.

Nos. 12, 14, and 15 contained adult bodies, two of which were each accompanied by a small iron article—probably a dress-fastener—near the neck. With No. 14 nothing was found.

Mound 13 is situated in the extreme southern corner of the wood. It has a diameter of 27 feet and an elevation of 3 feet. Under the centre was a large grave, measuring $8\frac{1}{2}$ feet north and south by $7\frac{1}{2}$ feet east and west, and $2\frac{1}{2}$ feet in depth. At the bottom of the grave lay the remains of two adult bodies, the iron tires of two wheels, and other pieces of iron belonging to a chariot. There were also two snaffle bridle-bits of iron (figs. 3 and 4), and several rings (fig. 5) and ornaments of bronze (figs. 6, 7, 8, and 9), belonging to the trappings of the horses. All were lying in the positions shown in Plate 1. Partly under the head of body “A” lay an iron ring 2 inches in diameter and a quarter of an inch in thickness; whilst on the left shoulder were some bones and part of the head of a pig, with some teeth and a tusk of the same animal. At the loins was a much-corroded article of iron—probably the fastening of a girdle, which had been ornamented with two bosses, about half an inch in diameter, of white enamel or ivory, which seem to have been set in thin bronze sockets. Probably this body was that of the owner of the chariot; whilst the second body (marked B)—with which no article of personal ornament was connected—may have been that of the charioteer.

From the arrangements in the grave, it would seem that the chief's attendant, as well as his chariot, had at the same time

been interred with him. There were no bones of the two horses, from which it is clear that these animals had not been interred but were only represented by their trappings. It also appeared that the wheels had been taken from the axle and placed in the position shown in plate 1. Most likely the light body of the chariot and its pole had been placed upon them, whilst the trappings for the horses were laid close by. Probably the car or body of the chariot was mainly put together without any iron bolts, much as were many old armchairs, which—excepting for the legs—it may have much resembled in make and form. It was not to be expected that any portion of the light car would remain to the present time, when even all trace of such substantial wooden parts as the naves and felloes of the wheels had disappeared entirely. However, we did observe a clear and distinct cavity, two inches wide, in the soil filling the grave close above the wheels. This cavity extended horizontally more than 4 feet in a curved direction, and was caused unquestionably by something which had gone to decay—probably the curved frame of one of the sides of the chariot.

In the substance of the mound over the grave were found several pieces of a vessel of white-coloured glass. These pieces of glass were strongly iridescent, indicating a considerable age, yet, most probably, they are only the fragments left by some previous explorers many years ago, and as I took out with my own fingers one piece which lay only three inches above the wheels of the chariot, evidently the former opening had only just missed the interment.

Mound No. 16 is situated at the eastern corner of the wood. It measured 30 feet in diameter and 3 feet in height. The oval grave beneath was 7 feet north and south, $5\frac{1}{2}$ feet east and west, and $2\frac{1}{2}$ feet in depth. At its northern end, near the top, lay the remains of a child from 6 to 8 years of age (marked A),¹ the head lay to west-south-west, placed on the left side, with the legs drawn up to a right angle with the trunk, the right arm being bent over the body, the left arm was doubled back with the hand under the head. Near the right forearm lay a crushed and much-corroded iron ring,

¹ See Table opposite page 8.

probably an armlet. On the floor of the grave, in the extreme north-west corner, lay the remains of a young child (B). At the east side of the grave, near the bottom, were the remains of a young adult (C), of strong make laid on its back, the knees being pulled up to a right angle with the spinal column; the right arm was bent over the chest, with the hand on the left shoulder, and the left arm doubled with the hand under the face. The head pointed north. Close under the last body was another adult (marked D), on the floor of the grave, with the head in the opposite direction, laid on left side, with the knees drawn up, the right arm doubled back with the hand to the head, the left arm bent over the body with the hand up to the face. On the middle of the right humerus were pieces of a bronze article much decayed, and close in front of the breast lay portions of a bronze fibula. Also on the bottom at the west side of the grave was the body of an adult (E), with the head to north, laid on its left side, with the knees less drawn up than is usually the case in these Danes' Graves; the right arm was bent over the chest with the hand on the left humerus, the left arm was placed at full length with the hand near the knees. On the wrist of the right arm were traces of a small bronze armlet.

This grave is a somewhat remarkable one as it contained the unusual number of five bodies, all apparently interred at the same time. We shall be excused for asking, were they the members of the same family? and what led to such an uncommon occurrence?

It must be noted that no trace of cremation has at any time been observed in the Danes' Graves mounds. Neither have there been found any broken up human bones with these interments; an occurrence so frequent in the barrows of the stone and bronze ages.

It has now been made quite clear by these last researches that the so-called "Danes' Graves" have nothing to do with the Danes, but constitute the graveyard of a comparatively well-to-do community of peaceable¹ settlers who had, for a somewhat lengthy period, dwelt near by—a charming spot for an early settlement—during the Early Iron Age.

¹ No weapons of war have ever, to my knowledge, been found.

Like most of the ancient faiths, their religion seems to have contained the belief in a future state, in which the requisites of this life, such as food, etc.,¹ would be needed in the next, even to the extent of requiring cattle.

These "Danes' Graves" closely resemble in many ways the group of about 200² small barrows which once existed at Arras, near Market Weighton, and in which the remains of three chariots were found. They also resemble the group of not less than 170 small mounds in Scarborough Park, near Beverley.³ Six small mounds of the Scarborough group were opened by the writer in 1895,⁴ and though no instrument or ornament was found, portions of two skulls were obtained from the almost totally decayed bodies found in this group of barrows. These skulls are of a decidedly long type, clearly indicating their racial kinship with the people who buried at the "Danes' Graves" and in the Arras group of barrows, all of which are markedly dolichocephalic. The 15 measurable crania I have obtained from the recent excavations give an average breadth index of about .735, which is nearly the same as the average breadth index of those previously obtained and measured from "Danes' Graves."⁵

The large number of mounds in each of the three groups show that each community had occupied the neighbourhood for a considerable time, and probably the settlements date from about the same period.

As I have expressed in a previous paper,⁶ it is reasonable to hope that some future explorer may also find remains of the chariot in the Scarborough mounds.

The strongly-marked type of long head in the three aforementioned groups of barrows must be due to one of two causes.

¹ The Rev. Canon Greenwell found 4 goats accompanying a body, in one of these Danes' Graves.—See the *Archæological Journal*, Vol. xxii, page 264.

² See Oliver's *History of Beverley*, foot note, page 4.

³ The *Journal of the Archæological Institute*, vol. xv., page 151, gives an account of a group of 120 small mounds, mainly in rows, in the midst of which are three ordinary tumuli. They are described as being about 6 feet in diameter and 1 foot high, and varying from 3 to 4 or 5 paces apart. This group is situated at the northern extremity of Holm Heath, Dorsetshire.

⁴ See the *Journal of the E. R. Antiquarian Society*, vol. iii.

⁵ See the writer's previous paper; also the *Archæological Journal*, vol. xxii., page 264.

⁶ The *Journal of the East Riding Antiquarian Society*, vol. iii.

Either they are the almost unmixed descendants of the long-headed Britons of the stone-using period—which, if I am not mistaken, Canon Greenwell hinted at in his able address given at the “Danes’ Graves” on the day of opening—or they belong to invaders of a comparatively recent period—say a few centuries before the Roman occupation of this country—who settled in little communities along the east coast. To this latter view the writer is rather inclined, as there seems to be, judging from our present knowledge, a great leap in the advance in ornamentation and the art of working in metals between the barrows containing bronze only and those which contain iron,¹ rather than a gradual transition from one stage of culture to the other. Besides, it is difficult to conceive how, after passing through the lengthy bronze period, and existing along with the predominating round-headed people of that epoch, a community with such a distinctively opposite cranial feature could have survived almost unmixed to so late a time. But then again, if these dolicocephalic people were comparatively recent settlers, whence did they come? Were they from Gaul or Phœnicia? And are we acquainted with any country that was able to supply this nearly unmixed cranial type? Only further research can, and undoubtedly will, ultimately settle this matter.

¹ The marked prevalence of the long type of skull found, I believe, in all the graveyards of the early iron period supports the latter view.

THEIR TEETH.

If good teeth denote a sound constitution, the occupants of "Danes' Graves" must have been healthy indeed, as No. 9 has the most beautiful set of teeth I have ever seen, and very few of them had lost any teeth during life, whilst there is not a hollow tooth to be found in the whole lot. The two or three appearances of slight unsoundness are probably due to erosion only. One of the adult skulls (16D) seems to never have had the full set of teeth—some of the wisdom teeth having never made their appearance. In one very remarkable instance—that of the probable owner of the chariot—the upper jaw on the right side, has an extra tooth, making 33 in all; there being a fourth molar on that side of the jaw. Altogether this series of skulls is a very interesting one, and of considerable ethnological value.

AN EXPLANATION OF THE ACCOMPANYING TABLE.

This table shows that in the 16 mounds opened there were found 20 bodies, of which 9 were probably males, 8 females, and 3 children. Of these 11 had their heads directed approximately to the north, 5 to the south, and 4 to the west; whilst 3 lay on their backs, 14 on the left side, and 2 on the right side.

The knees were much drawn up, and in 11 cases were pressed over and pointing to the east, 4 to the west, 2 to the north, and 2 to the south. In nine instances the body was accompanied by an iron article, in five by bronze articles, in two by animal bones, and only in one instance by pottery.

The 9 male skulls give an average breadth index of .755, the females .710, and the two together give a breadth index of .735.

1897.

DANES' GRAVES.

1897.

No. of Monnds.	Head to	On Sides or Back.	Knees pointing to	M—Man. F—Female. C—Child.	Length of Femur.	Male Bodies.			Female Bodies.			Age.	Accompanied with				Remarks.
						Skull Length.	Skull Breadth.	Index.	Skull Length.	Skull Breadth.	Index.		Iron.	Bone.	Bronze.	Pot.	
						Inches.	Inches.		Inches.	Inches.							
1	N	B	E	M	17 $\frac{1}{2}$	7.20	5.85	.815	—	—	—	60 to 70	1	1	—	1	Broad face.
2	S	B	E	?	17	Unmeasurable			—	—	—	18 to 20	—	—	—	—	
3	S	L	W	F	16	—	—	—	7.35	5.35	.727	60 to 63	1	—	—	—	
4	N	L	E	M	17 $\frac{1}{2}$	7.20	5.45	.756	—	—	—	35 to 40	1	—	—	—	Wisdom teeth very small.
5	N	L	E	M?	17	7.00	5.30	.755	—	—	—	50 to 60	—	—	—	—	
6	This mound		rilled previously.		—	—	—	—	—	—	—	—	—	—	—	—	
7	N	L	E	M-C	14 $\frac{1}{2}$	7.00	5.20	.740	—	—	—	12 to 14	—	—	—	—	
8	N	L	E	M	16	7.55	5.60	.755	—	—	—	35 to 45	—	—	—	—	
9	W	L	N	M	18 $\frac{1}{2}$	7.25	5.55	.765	—	—	—	18 to 22	—	—	—	—	Skull thin and light, teeth most beautiful.
10	S	L	W	F?	16 $\frac{3}{4}$	—	—	—	—	—	—	—	1	—	—	—	
11	SSW	L	W	F	18	—	—	—	7.70	5.55	.710	50 to 55	—	—	1	—	
12	N	L	E	F	17 $\frac{1}{4}$	—	—	—	6.95	5.10	.733	35 to 45	1	—	—	—	
13A	W	R	S	M	18 $\frac{1}{4}$	7.35	5.58	.760	—	—	—	40 to 50	1	1	1	—	(A small molar behind the top side wisdom tooth; 33 teeth in all.
13B	N	L	E	M	17 $\frac{1}{2}$	7.55	5.50	.728	—	—	—	45 to 55	1	—	1	—	
14	NE	L	SE	F	17	—	—	—	7.20	5.05	.700	40 to 45	—	—	—	—	
15	N	R	W	F	17 $\frac{1}{2}$	—	—	—	7.25	5.20	.717	45 to 50	1	—	—	—	(Scar of an old cut, 2 inches long, on frontal bone.
16A	WSW	L	N	C	10 $\frac{1}{2}$	Unmeasurable			—	—	—	4 to 6	1	—	—	—	
16B	Unmeasurable			C	—	—	—	—	—	—	—	2 to 5	—	—	—	—	
16C	N	B	E	M	17 $\frac{1}{2}$	7.35	5.35	.727	—	—	—	15 to 18	—	—	—	—	Wisdom teeth not appeared yet.
16D	S	L	E	F?	18 $\frac{1}{2}$	—	—	—	7.60	5.20	.684	40 to 45	—	—	1	—	Seems to never have had wisdom teeth.
16E	N	L	E	F	16	—	—	—	Unmeasurable			55 to 60	—	—	1	—	
20	11-5-4	3-14-2	11-4-2-2	9-8-3	—	Male average, .755.			Female average, .710.			—	9	2	5	1	

Average of the whole, .735. Very few teeth lost during life, and not a hollow tooth in the whole lot.



EXPLANATION OF PLATE I.,

which shows the contents of the Grave, in the positions in which they were found.

No. 1 is an embossed ring-shaped decoration of thin bronze (fig. 6), 2 inches in diameter, which has been fixed to something now decayed.

Nos. 2, 3, 6, 7, and 9 are hollow rings (fig. 5) of bronze, resembling thin tubing. Nos. 3 and 6 measure 2 inches, Nos. 2, and 9, $2\frac{1}{2}$ inches, and No. 7, $2\frac{3}{4}$ inches in diameter, all being about $\frac{9}{16}$ of an inch in thickness. They have almost certainly belonged to the fittings of the chariot or the harness of the horses.

Nos. 4 and 8 are two snaffle bits (figs. 3 and 4) of iron, a little over 9 inches in length. The cheek rings of each bit measure respectively about $2\frac{3}{4}$ and 3 inches in diameter. It is a peculiar feature that one ring of each bit should be larger than the other. The thickness of the rings is about $\frac{3}{10}$ of an inch. The joint in the middle of each bit seems to have been peculiar.

No. 5 is an embossed circle of thin bronze (fig. 9), $1\frac{1}{2}$ inches in diameter, adhering to some corroded and undistinguishable substance. In shape it resembles a miniature shield of a circular form.

Nos. 10 and 13 are two curved pieces of iron (fig. 10) about $\frac{1}{2}$ an inch in thickness, the length of each along the outside of the curve being 8 inches. One end of each piece is broadened out to about $1\frac{1}{4}$ inch square, from which its thickness tapers a little towards the opposite end, and terminates in a small button-shaped enlargement or knob. These two curved pieces may have served to fix the body of the car to the axle.

Nos. 6 and 11 are two small button-shaped plates of thin bronze (figs. 7 and 8), slightly convex on one side and concave on the other. They seem to have been secured to some

portion of the harness of the horses, and measure respectively $\frac{3}{4}$ of an inch and 1 inch in diameter. The larger one has a small hole through the centre, and on the convex side is a faintly-engraved representation of a wheel with four spokes.

No. 12 is a crooked piece of iron, which bears the impression of the wood once attached to it. It is $3\frac{3}{4}$ inches long and $\frac{1}{4}$ of an inch thick, with one end flattened and broadened.

Nos. 14 and 17 are the iron hoops for the naves, 5 inches in diameter inside, $\frac{5}{8}$ of an inch wide, and nearly $\frac{1}{4}$ of an inch in thickness.

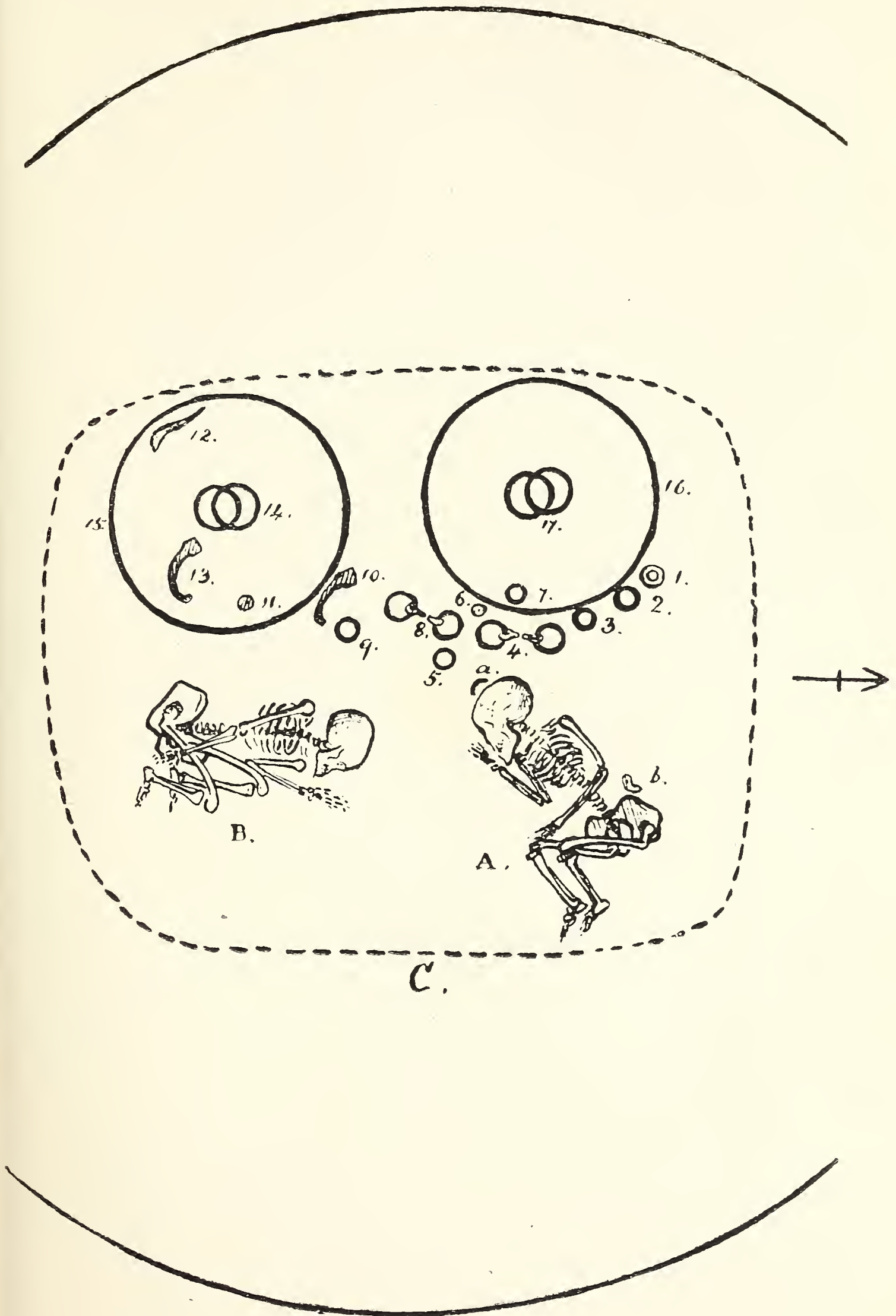
Nos. 15 and 16 are the iron hoops of the wheels. One measures 2 feet $6\frac{3}{4}$ inches in diameter, $1\frac{2}{8}$ inches in width, and about $\frac{3}{10}$ of an inch in thickness. It is remarkable that the other wheel measures only 2 feet $5\frac{1}{4}$ inches in diameter, $1\frac{2}{8}$ inches in width, and $\frac{3}{10}$ of an inch in thickness. This difference of $1\frac{1}{2}$ inches in diameter of the two wheels would seem to suggest that originally they were not a pair.

J. R. MORTIMER.



PLATE I.

D.

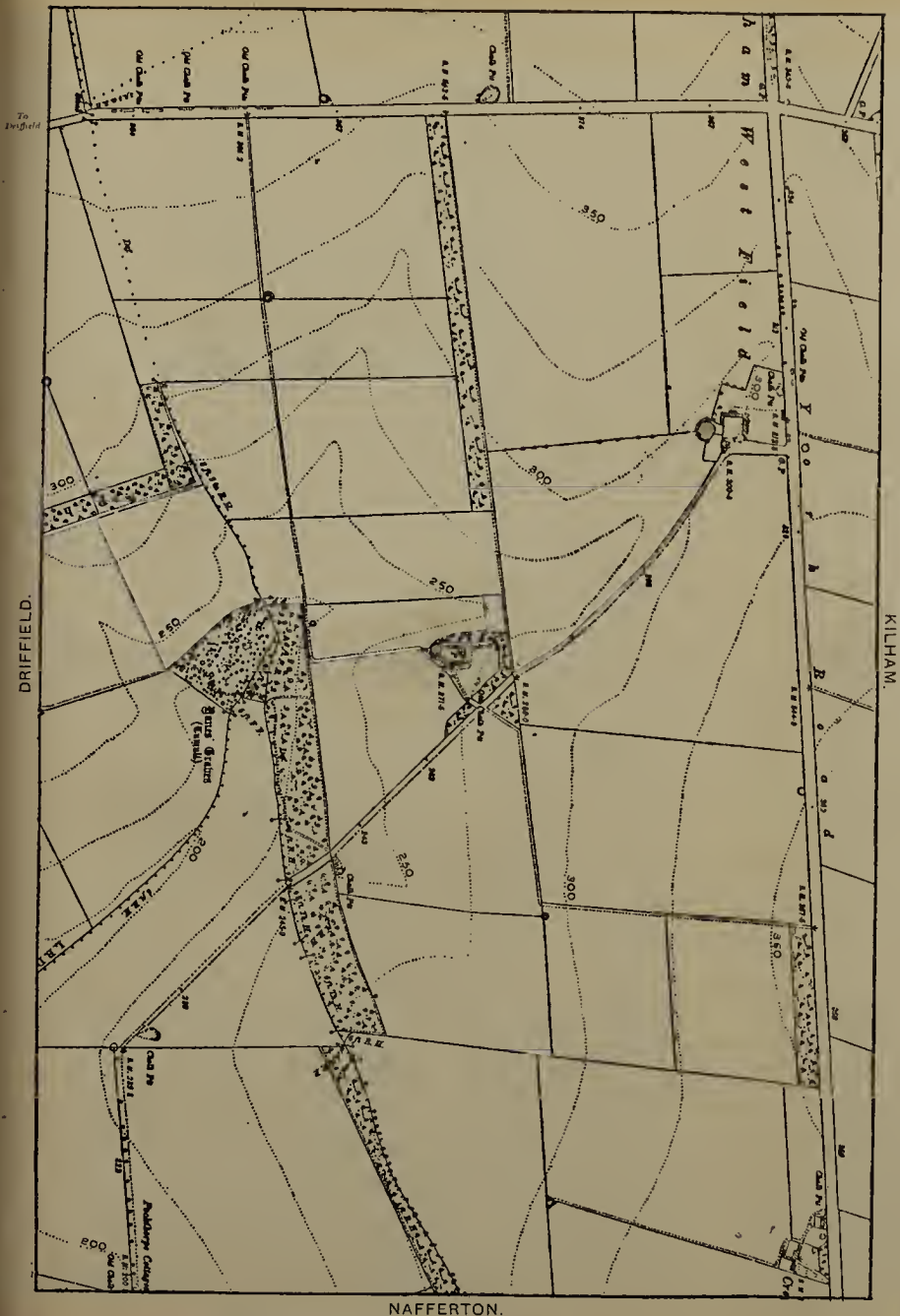


D.

C.—Outline of Grave.

D.—Outline of Mound.





DRIFFIELD.

KILHAM.

NAFFERTON.





1.



2.

West, Newman lith

1. Enamelled pin found in the "Danes' Graves".
2. Side view of the same pin.



SOME ACCOUNT OF
ANALECTA EBORACENSIA.

QUAINT old Fuller, at the end of his section on York¹ says :
“ Let me adde, I am informed that Sir Thomas Widdrington, a person accomplished, in all Arts, as well as in his own Profession of the Laws, hath made great Progress in his Exact Description of this City. Nor doe I more congratulate the happiness of York coming under so Able a Pen, then Condole my own Infelicity, whose unsuccessful attendance hitherto could not compass speech with this worthy knight. Sure I am, when this work is set forth, then indeed YORK SHALL BE,—what ? A city most compleatly Illustrated in all the Antiquities and Remarkables thereof.” These words were published in 1662, two years before the death of Sir Thomas Widdrington.

The commendable hope expressed by Fuller, that Sir Thomas would publish the materials he had collected for the history of York, was not realised.

More than thirty years later, we find an historian lamenting that Widdrington's history of York is still in manuscript, and likely to remain unpublished. Bishop Gibson, in his edition of Camden's *Britannia*,² published in 1695, says : “ This ancient and noble city might have had an agreeable light, if Sir Thomas Widdrington, a person accomplisht in all arts, as well as in his own profession of the laws, after he had wrote

¹ Thomas Fuller, *Worthies of England*, 1662, p. 232.

² P. 734.

an entire history of it, had not upon some disgust prohibited the publication. The original¹ manuscript is now in possession of Thomas Fairfax of Menston, Esquire."

There is a most unaccountable error concerning this collection in *Memoirs of the Protectoral House of Cromwell*. It is there stated that Sir Thomas Widdrington published his *Analecta Eboracensia* in 1660.²

Analecta Eboracensia represents the first known attempt to preserve the memory of the historic events of the Northern Capital, and was completed nearly a century before Francis Drake, the great historian of York, published his *Eboracum*.³

Thomas Widdrington was a barrister of Gray's Inn, Holborn,⁴ his coat of arms being preserved in one of the compartments of the bay window of the Hall there.⁵ He was Recorder of York during the reign of the unfortunate Charles I and the Commonwealth, and represented that constituency in Parliament in 1654, 1656, and 1660.

He spent some years in collecting and arranging materials for his local history, and offered to the Mayor and Corporation, that in publishing the book, he would be pleased to dedicate it to the "Mayor, Aldermen, Sheriffs, Common Council, and Citizens." It was generally felt that a man occupying a position so high and influential as that held by Sir Thomas might have attempted something of a more material character for the advancement of the city, such as obtaining an Act of Parliament for the improvement of the navigation of the Ouse, etc. Nor can it be said that the people, greatly reduced as they were in resources by the events of the recent Civil War,

¹ Drake speaks of the Menston MS. as a *copy*. In *Anecdotes of British Topography* (1768), p. 547, and Gough, *British Topography* (1780), p. 418, the same statement appears.

² Noble, M., *Memoirs of the Protectoral House of Cromwell* (pub. 1787), vol. I, p. 428.

³ Drake's work appeared in 1736.

⁴ He was admitted in 1618, and his elections were as follows:—Barrister 16—; Ancient 1639; Bencher 1639; Lent Reader 1640; Serjeant 1641.

⁵ These arms are figured in Dugdale's *Orig. Jurid.*, p. 303, being copied from the window at Gray's Inn.

had no just grounds for their complaints, especially considering that their votes had contributed to secure for Widdrington his position in Parliament. The proposed dedication of the work, a draft of which was forwarded to the city authorities for approval, was received with coldness by those whom it was designed to honour, and not only with coldness, but even derision. Hence the "disgust" of the author, and his prohibition of the publication spoken of by Bishop Gibson.

The following reply,¹ expressing despair concerning the state and prospects of the citizens, and concluding with a vehement sting, was sent to the learned and industrious author :—

"SIR,—You have told us by the former discourse what the city was, and what our predecessors have been. We know not what this may have of honour in it : sure we are, it hath but little of comfort. The shoes of our predecessors are too big for our feet, and the ornaments which they had will not serve now to cover our nakedness, nor will their wealth feed us, who are not able to tell you what we are, unless it be this, that we are poor and miserable. Our predecessors, if they could see us, would either disclaim us, or be ashamed of us. You have told us that this city was some time the metropolis of the Britons ; the Royal Court of the Roman Emperors, and a seat of justice anciently, and also in later times ; how is it now become unlike itself ? The inhabitants have many of them forsaken it, and those who have not, she cannot maintain, whilst some cities are become so big with buildings, and numerous with inhabitants, as they can be hardly fed or governed. York is left alone, situate in a country plentiful for provisions, and stored, if the people had money to buy them. Trade is decayed, the river become unnavigable by reason of shelves. Leeds is nearer the manufactures, and Hull more commodious for the vending of them ; so York is, in each respect, furthest from the profit. The body of York is so dismembered, that no person cares for the being the head of it ; the suburbs, which were the legs of the city, are cut off ; the late Court of Justice, which, indeed, was built upon the sand only, is sunk, and with it many considerable persons are swallowed up ; you cannot now see any confluence of suitors or people ; he that looks upon the city may see her paps dry, and her eyes bedewed with tears, refusing to be comforted, because all these are gone. Now, sir, for the Britons you mention ; we can neither derive pedigree or wealth from them ; nor can we hear of any of their descendants, unless in Wales and Cornwall, or upon some mountain or hill in Cumberland ; and when we have found them, we fear that they will not own us for their kindred or relations ; we have lost our genealogy, and forgot the British dialect ; they tell us that our blood is not British, but Roman, Saxon, and Norman, which, or some of which, did expel these ancient Britons, and we might expect the same reception from the Roman, Norman, or Saxon, if we should appeal to any of them ; and we find by experience that it is not a long

¹ A copy of this reply is bound up with the MS. at the end, and entitled "A sad complaynt by the City of York to the Author."

series, or beadroll of ancestors, or predecessors, but wealth and estate which set a value upon men and places. As for our wealth, it is reduced to a narrow scantling ; if we look upon the fabric and materials of the city, we have lost the suburbs which were our skirts, our whole body is in weakness and distemper, our merchandize and trade, our nerves and sinews, are weakened and become very mean and inconsiderable : for the earls, dukes, archbishops, deans, prebends, and abbots of York, they are no homogeneal parts of our body, but only our garnishments, embroideries, and ornaments, and sometimes pricks and goads ; our present misery is, that we can hardly keep together our homogeneal and essential members, some of them using us, as Absalom's mule did him, either leaving of us, or refusing to act as magistrates amongst us, when our very Government seems to hang by a weak, or upon some slender twig. Now for all the monuments of our former state and glory we find no warmth or comfort from them ; but it seems to add to our unhappiness that our predecessors were so happy. Give us leave for conclusion to tell you that a good purse is more useful to us than a long story, which might enable us :—(1) To make our river more navigable ; (2) To re-edify the decayed parts of the city ; (3) To raise a stock to set up some manufacture in the city ; (4) To relieve our poor, into which we may all of us fall if some timely course be not taken by which, through God's blessing, this tottering and wasted city may be upheld."

This answer, we confess, with all our sympathy for the good Mayor and Citizens, goes beyond the characteristic frankness of the people of the North, and seems to revel in its bluntness, whilst manifesting little or nothing of the reputed hopefulness and optimism of the Northern character. Sir Thomas felt the rebuff most keenly, and it is not to be wondered at that he prohibited the publication of his collection, though it represented researches extending over many years. As already stated, the original MS. was in the possession of Fairfax of Menston in 1695. It was at first the property of Thomas Lord Fairfax, the Parliamentary General,¹ brother-in-law to Sir Thomas Widdrington. Doubtless it came into the possession of the Menston family at the death of Lord Fairfax in 1671. At a later date it passed into the hands of a Mr. Richardson, an "apothecary," of London, who was a well-known book collector. From his hands it passed, by purchase, into the possession of Sir Robert Smith, of Suffolk,² and contains on one of the end papers the arms of that gentleman. While in

¹ Drake, *Eboracum*, Preface. See also the notes appended to the other copies described farther on.

² The baronetcy was created in 1714, and expired in 1811.—Burke, *Extinct and Dormant Baronetcies*.

his hands it was introduced by Dr. Vernon,¹ of St. George's, Bloomsbury, to Francis Drake, who was then engaged upon his *Eboracum*, and who had some time previously discovered another copy of this manuscript history among the records of the city.² Drake used these manuscripts freely, and incorporated extracts from them into his own work. Drake's remarks are as follows:—"And now, since Sir Thomas Widdrington's name is on the carpet, I must own my obligation to that gentleman, who was the first that I know of who undertook to write in a particular way the history of this city. This writer in all probability began to make his collections for his history in King Charles the First's time, when he was Recorder of York. For in a speech to that monarch, at his coming to the city, in the year 1639, he pays a strained compliment to the King of its being more honoured by his having been Duke of York, than by the residence and deaths of the Emperors, which shows that he had then read something of the antiquities of it. The civil wars intervening, in which our author could not be unconcerned, his history seems only to be finished in the halcyon days for his party that ensued. And it must be after the Restoration that he sent the city word he intended to print and dedicate his elaborate performance to them."³

Concerning the particular copy which belonged to Lord Fairfax, Drake says: "This is the very original which he himself (Sir Thomas Widdrington) intended for the Press"; and again, he says, it is "the very book which he himself dressed up, and put the last hand to for the Press."⁴ Happily this manuscript is easily accessible, and to a careful reader the

¹ Inducted Feb. 23rd, 1731.—Geo. Clinch, *Bloomsbury and St. Giles*, p. 129.

² Drake says he had previously tried to get access to the Menston manuscript, but had failed. It was kept at that time *sub sigillo*. Drake, in speaking of the Menston MS. of his day as a *copy*, says he only repeats what is a matter of common report. Is it not possible that, though the original MS. was at Menston in 1695, yet in 1736 only a *copy* remained there? Drake does not attempt to account for the vicissitudes of the original MS. after it left the library of Lord Thomas Fairfax until it appears in the possession of Mr. Richardson.

³ Drake, *Eboracum* Preface.

⁴ Drake, *ibid.*

evidences of what have just been quoted from Drake are abundant. Let one illustration suffice. On fol. 157 one or two lines are struck out. The author on further consideration has determined to let them stand, and has written on the top margin of the page, "Print what is here struck out." This copy ultimately became the property of Christopher Sykes, Esq., from whom it was purchased in April 1881, by the Trustees of the British Museum, in which institution the volume is now preserved—Egerton MSS., 2578. Upon one of the first pages of the work there is the following inscription, written by Drake's own hand:—"This manuscript was the work of Sir Thomas Widdrington, Knight, and as I apprehend, for several reasons, which I have given in the preface of my *Eboracum*, is the *original*.—Francis Drake, August 14, 1736."

Not seldom has the regret been expressed that this valuable manuscript has not been published. The author of *Eboracum* wrote: "What remains is only to recommend it to the present proprietary of the other copies that they would print it; since one of them is offered for sale, and since no injunction from the author obliges them now to the contrary."

Widdrington's method of work, in one respect at least, leaves nothing to be desired, and furnishes an example to all those giving attention to the study of historic subjects. For his information he goes, whenever possible, to original documents. Of course, as one of the pioneers in topographical work, he was compelled to take this course. The Public Records (then in the Tower of London),¹ the Archives of York Minster and the City Corporation, the ecclesiastical documents then lying in St. Mary's Tower (York), the evidences of Yorkshire families—the Vavasours, the Fairfaxes, the Slingsbys and others—the Bodley MSS., the Cotton MSS., and other original sources, are laid under contribution for his work.

It must be remembered also that, at the time Sir Thomas was making his collection, many of the works with which we are familiar had not been put into type, and could only be consulted by him in manuscript form. *Doomsday Book* was

¹ Many references will be found to the Charter Rolls, Patent Rolls, Close Rolls, Exchequer Rolls, Statue Rolls, etc.

unpublished. There were no Calendars to the Rolls except the imperfect manuscript ones. Such documents as *Testa de Nevill* were only accessible in the same form. Hearne had not issued Leland's *Itinerary*. Robert of Gloucester, Fordun, and other writers were still unpublished. These and similar facts lend additional credit to the achievement of our author.

Reference has been made to Drake's acknowledged indebtedness to Widdrington. Without detracting from Drake, and without giving to Widdrington praise which is not his due, it may be said that Widdrington's collection is the basis of Drake's masterpiece. I have read and compared the two books for years, and I have been confirmed in this opinion at almost every point.

I have been surprised to find that sometimes Widdrington is more correct than Drake, though Drake had the opportunity of revising Widdrington's work. As an example of what I mean, I will refer to a quotation from the Charter Rolls. Drake transfers this list (with two additions) to his *Eboracum*, p. 211. On comparing the two lists, it will be found that Drake differs from Widdrington. In each instance it is Drake who is incorrect.

Reference might be made to other inaccuracies in Drake.¹

The time has arrived when a revised and extended edition of Drake's monumental work would be of immense advantage.

¹ Whilst referring to these errors, I will mention another matter to which the late Canon Raine directed my attention, *viz.*, that there was no Mayor of York until the reign of Henry III (1216—72). I find a digest of the information given me by Canon Raine in his *York* (Historic Town Series), pp. 193-4. He says (the italics being mine):—

"King John, by deed dated March 25, 1200, confirmed to the citizens their Merchant Guild and their houses in England and Normandy, and their lastage, as freely as they had them in the time of Henry his grandfather, and as they are specified in the charters of Henry his father and Richard his brother. When John specified this charter, York was still under the rule of a *praepositus*, or reeve; *the claim which Drake makes to its having a mayor at an earlier period being quite unfounded*. We learn from evidences preserved at Durham that whilst Robert Wallensis was sheriff of Yorkshire (1206-11), Gerard, the bell-founder, was *praepositus* or *reeve* of the city, and that William Fairfax was holding that office about the same time. *In 1217 we find a mayor in the place of the praepositus*, and, no doubt, there were bailiffs as well. In that year the king orders the sheriff of Yorkshire to give to Hugh de Selby, mayor of York, the house which belonged to Leonard the Jew."

I do not say that Sir Thomas is always correct. But, it must be allowed that many of his faults are slips on the part of the amanuensis, and would have been corrected had the book passed into print during the lifetime of the author.

The collection of Widdrington presents one grave fault—a lack of order and method in the arrangement of the chapters. At first I suspected that the binder of the papers was in some measure answerable for this apparent confusion, so far as the order of the chapters is concerned; but this is not the case.

There are, at least, three other copies of this manuscript besides the one I have re-produced.

1. As already stated, Drake found a copy of *Analecta Eboracensia* among the City Records.

This MS. was a “first draft,” without the author’s corrections.

Drake says that this copy was endorsed as follows:—

“ This is the first draft out of his own papers. A second, my Lord Fairfax has by his delivery, with this note in the front, *viz.*, that in the last and perfect copy he has expunged divers things in both the former, and made some small additions as were defective in both.

* * * * *

This is a more imperfect copy than that which Sir Thomas Widdrington delivered to my Lord Fairfax, for it evidently appears that my lord’s book was copied out of this. And yet without question this is much more compleat than the last, because in the last he has expunged (it is his own word, but very improper for so learned a work) divers things in the former.”

This book is no longer among the Records of the City, but it, or a copy of it, is still extant in York. I regret that I have had extreme difficulty in viewing this manuscript: the owner, for good reasons of his own, being adverse to an examination of the volume.

2. There is a copy of this history at Oxford in the Bodleian Library.¹ This has a bookplate of Thomas Beckwith,² painter, of York. The notes on this folio indicate, and the comparatively recent character of the penmanship confirms, that this is a copy of the York manuscript just described.³

¹ Gough, *A Catalogue of Books relating to British Topography bequeathed to the Bodleian Library in 1797*, p. 327.

² For an account of this gentleman, see Davies, *Walks through York*, p. 238.

³ This MS. also contains a list of the Mayors, copied from a MS. belonging to Dr. T. White, of York.

3. Another copy was in the possession of Sir Robert Shaftoe (of Whitworth, Durham), who married a daughter of Sir Thomas Widdrington. No description of this copy has transpired, nor is its present possessor known to the lovers of Northern antiquities. Drake himself was not able to obtain access to this copy.

I have evidence of other copies having been in existence. Some of these were probably copies made from other copies. But it will serve no practical purpose to carry these investigations further. The fact that we have the MS. corrected by the author himself renders all other copies comparatively unimportant.

CÆSAR CAINE.



CATALOGUE OF BRITISH PLANTS IN THE HERBARIUM

OF THE

YORKSHIRE PHILOSOPHICAL SOCIETY.

PART IV.

Compiled by HENRY J. WILKINSON, *Hon. Curator, Botany.*

PORTULACEÆ.

	DATE.	COLLECTOR	HERBARIUM.
237. Claytonia perfoliata, Linn. <i>Alien. Distrib.</i> N.W. America. <i>Sp.</i> Moortown, near Leeds Aug.7,1882 Hedge bank, nr. Hanworth, Middlesex May,1897		W. Kirkby H. W. Pugsley	H. J. Wilkinson ,,
238. Montia fontana, Linn. <i>Springs and marshy places.</i> Shetland to Channel Islands. <i>Distrib.</i> N. and S. Temperate, Arctic and cold regions. <i>Sp.</i> Strensall Common, York 1882		H. J. Wilkinson	H. J. Wilkinson

TAMARISCINEÆ.

239. Tamarix gallica, Linn. <i>Alien.</i> Southern coast England and Ireland. <i>Distrib.</i> Shores of Atlantic and Mediterranean, W. Asia to N.W. India. <i>Sp.</i> Hastings, Sussex 1801 Planted round the garden of a house upon or near the South Denes (called 'Trafalgar House'), Yarmouth 1843 Near Whitegate, co. Cork Sept.,1894		Dr.Goodenough S. Hailstone R. A. Phillips	Rev. J. Dalton S. Hailstone H. J. Wilkinson
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ELATINEÆ.

	DATE.	COLLECTOR.	HERBARIUM.
240. <i>Elatine hexandra</i>, D.C.			
<i>Margins of ponds, etc.</i> Rare. Perth to Surrey and Cornwall.			
<i>Distrib.</i> Europe, from Norway southward to Spain.			
Sp. Shropshire	(1799)	R. Teesdale	Rev. J. Dalton
Anglesea	1800	Rev. J. Dalton	„
Bomere Pool, Salop	1845	Mr. Westcombe	S. Hailstone
„ „	1814	Rev. E. Williams	„
241. <i>Elatine hydropiper</i>, Linn.			
<i>Muddy ponds.</i> Surrey, Anglesea, Ireland.			
<i>Distrib.</i> Europe to S. Russia.			
Sp. In the Lagan Canal, near its junction with Lough Neagh	1837	D. Moore	S. Hailstone
Anglesea	(1800)	Rev. J. Dalton	Rev. J. Dalton

HYPERICINEÆ.

242. <i>Hypericum Androsæ-</i> <i>mum</i>, Linn.				
Tustan. <i>Thickets and hedges.</i> From Ross, southward.				
<i>Distrib.</i> M. and S. Europe, N. Africa, W. Asia.				
Sp.	Halifax, Yorkshire	(1790)	Mr. Robson.	S. Hailstone
	Inversnaid Mill, Loch Lomond ...	July, 1829	S. Hailstone	„
	Ruswarp Carrs, near Whitby ...	1801	W. Brunton	Rev. J. Dalton
	Tunbridge Wells	} (1820)	W. Middleton	W. Middleton
	Ruswarp Carrs, Whitby, Yorks. ...			
243. <i>Hypericum hircinum</i>, Linn.				
<i>Alien.</i>				
Sp.	Glanmire, co. Cork	Aug., 1891	R. A. Phillips	H. J. Wilkinson

	DATE.	COLLECTOR.	HERBARIUM.
244. <i>Hypericum elatum</i>, Ait.			
<i>Alien.</i>			
<i>Sp.</i> Uckfield, Sussex	1894	E. H. Farr	H. J. Wilkinson
245. <i>Hypericum perforatum</i>, Linn.			
<i>St. John's Wort. Woods and hedge banks.</i>			
Channel Islands to Southerland.			
<i>Distrib.</i> Europe (Arctic), North Africa, N.W. Asia.			
<i>Sp.</i> Copgrove, Knaresbrough, Yorks. ...	1790	Rev. J. Dalton	Rev. J. Dalton
Baildon Woods	1800	S. Hailstone	S. Hailstone
Ambleside	1820	S. Hailstone	„
246. <i>Hypericum quadrangulum</i>, Linn. (Exp.) Fr.			
<i>Copses and moist places. Perth, southward.</i>			
<i>Distrib.</i> Europe (Arctic), N. Africa, N.W. Asia.			
<i>Sp.</i> Askham Bogs, York	1800	S. Hailstone	S. Hailstone
Northwood, Renishan, Derby ...	1812	Miss Stovin (?)	„
247. <i>Hypericum quadratum</i> (Stokes).			
<i>Wet places. Ross, southward.</i>			
<i>Distrib.</i> Europe, N. Africa.			
<i>Sp.</i> Copgrove, nr. Knaresbrough, Yorks.	1790	J. Dalton	Rev. J. Dalton
Goathland, Yorks., Terrington Carr, N. Yorks.	1820	W. Middleton	W. Middleton
248. <i>Hypericum humifusum</i>, Linn.			
<i>Sandy and gravelly banks. Caithness to Cornwall.</i>			
<i>Distrib.</i> Europe, etc.			
<i>Sp.</i> Strensall, York	1810	W. Middleton	W. Middleton
Thorp Arch	1840	S. Hailstone	S. Hailstone

	DATE.	COLLECTOR.	HERBARIUM.
249. <i>Hypericum pulchrum</i>, Linn.			
<i>Dry heaths and banks. Caithness to Cornwall.</i>			
<i>Distrib. W. Europe, from Norway, southward.</i>			
Sp. Ripon	1800	J. Dalton	Rev. J. Dalton
Thorp Arch	1840	S. Hailstone	S. Hailstone
250. <i>Hypericum hirsutum</i>, Linn.			
<i>Copses, etc. From Ross, southward.</i>			
<i>Distrib. Europe, Siberia, W. Asia.</i>			
Sp. Richmond, Yorks.	1800	J. Dalton	Rev. J. Dalton
Knarborough, Yorks.	1820	W. Middleton	W. Middleton
In the lane near Trench	1799	S. Hailstone	S. Hailstone
Bramham, Yorks.	1801	"	"
Wilton, Yorks.	1822	"	"
251. <i>Hypericum montanum</i>, Linn.			
<i>Copses, in gravelly or chalky soil. From Ayr to Cornwall.</i>			
<i>Distrib. Europe to the Caucasus, N. Africa.</i>			
Sp. In the lanes near Thorner and Bramham, Yorks.	1801	S. Hailstone	S. Hailstone
252. <i>Hypericum elodes</i>, Huds.			
<i>Bogs, etc. From Argyle, southward.</i>			
<i>Distrib. W. Europe, from Holland.</i>			
Sp. Langwith and Heslington, York ...	1810	W. Middleton	W. Middleton
Knarborough, Yorks.	1790	J. Dalton	Rev. J. Dalton
Hawksworth Moor	1844	Mr. Birkbeck	S. Hailstone
Delamere Forest, Cheshire	1807	S. Hailstone	"
Skipwith Common, York	1840	H. Ibbotson	H. J. Wilkinson
" "	1897	H. J. Wilkinson	"
Strensall Common, York	1840	H. Baines	"

MALVACEÆ.

	DATE.	COLLECTOR.	HERBARIUM.
253. <i>Althæa officinalis</i>, Linn.			
Marsh Mallow. <i>Marshes near the sea.</i>			
From Clyde, southward.			
<i>Distrib.</i> Europe, from Denmark, southward.			
<i>Sp.</i> Near Arundel Castle	1810	W. Middleton	W. Middleton
Dimchurch, Kent	1847	Mrs. J. Hailstone	S. Hailstone
Ditches below Burgh Castle, Yarmouth	1843	S. Hailstone	S. Hailstone
254. <i>Althæa hirsuta</i>, Linn.			
<i>Alien.</i> South of England.			
<i>Distrib.</i> Europe, from Belgium, southward.			
<i>Sp.</i> Between Cobham and Cuxton, Kent	(1826)	Prof. Henslow	Rev. J. Dalton
Cobham, Kent	1840	Mr. Dennes	S. Hailstone
255. <i>Lavatera arborea</i>, Linn.			
<i>Maritime rocks.</i> From Clyde, southward.			
<i>Distrib.</i> Coasts of Europe, eastwards to Greece.			
<i>Sp.</i> Near Dublin, Ireland	1837	Laing	S. Hailstone
Inch Garvey, Firth of Forth, Scotland	1810	J. Dalton	Rev. J. Dalton
Near Fort Carlisle, Cork Harbour ...	1894	R. A. Phillips	H. J. Wilkinson
256. <i>Malva sylvestris</i>, Linn.			
<i>Waste places.</i> From Ross, southward.			
<i>Distrib.</i> Europe, N. Africa, Siberia.			
<i>Sp.</i> Heslington, York... ..	1810	W. Middleton	W. Middleton
Copgrove, Yorks.	1790	J. Dalton	Rev. J. Dalton
257. <i>Malva rotundifolia</i>, Linn.			
<i>Waste places.</i> From Aberdeen, southward.			
<i>Distrib.</i> Europe, N. Africa, N. and W. Asia.			
<i>Sp.</i> Copgrove, Knaresborough, Yorks ...	1790	J. Dalton	Rev. J. Dalton
Bradford, Yorkshire	1810	S. Hailstone	S. Hailstone

258. Malva moschata, Linn.				DATE.	COLLECTOR.	HERBARIUM.
<i>Meadows, etc.</i> From Clyde, southward.						
<i>Distrib.</i> Europe.						
<i>Sp.</i>	Between Rye and Hastings ...	...	...	1810	W. Middleton	W. Middleton
	Copgrove, Yorks. ...	...	...	1790	J. Dalton	Rev. J. Dalton
	Apperley and Bradford, Yorks. ...	...	...	1810	S. Hailstone	S. Hailstone

TILIACEÆ.

259. Tilia platyphyllos, Scop.						
Lime tree or Linden. <i>Woods, etc.</i> Hereford, N.W. Yorks.						
<i>Distrib.</i> Europe, from Denmark, southward.						
<i>Sp.</i>	Boxhill, Surrey ...	...	...	(1810)	J. Dalton	Rev. J. Dalton
	Esher, Surrey ...	...	...	1843	H. C. Watson	S. Hailstone
	Near Edinburgh ...	...	...	1820	R. K. Greville	Rev. J. Dalton
260. Tilia vulgaris, Hayne.						
<i>Alien.</i>						
<i>Sp.</i>	Clifton, York ...	...	...	1890	A. Wilkinson	H. J. Wilkinson
261. Tilia parvifolia, Ehrh.						
<i>Woods.</i> From Cumberland, southward.						
<i>Distrib.</i> Europe (excl. Greece and Turkey).						
<i>Sp.</i>	Little Malvern, Worcester ...	...	...	1847	M. Roby	S. Hailstone
	Swansea, Glamorgan ...	...	...	(1820)	J. Dalton	Rev. J. Dalton

LINEÆ.

262. Linum catharticum, Linn.						
<i>Heaths, etc.</i> From Shetland to Cornwall, &c.						
<i>Distrib.</i> Europe (Arctic), W. Asia.						
<i>Sp.</i>	Boston Spa, Yorks. ...	...	...	1820	S. Hailstone	S. Hailstone
	Copgrove, Yorks. ...	...	...	1790	J. Dalton	Rev. J. Dalton

	DATE.	COLLECTOR.	HERBARIUM.
263. <i>Linum perenne</i>, Linn.			
<i>Chalky soils.</i> Durham to Essex.			
<i>Distrib.</i> M. and S. Europe to India.			
<i>Sp.</i> Mackershaw Woods, Ripon... ..	1805	W. Brunton	Rev. J. Dalton
Gog Magog Hills, Camb.	1820	S. Hailstone	S. Hailstone
264. <i>Linum angustifolium</i>, Huds.			
<i>Sandy or limestone pastures.</i> {Lancashire, southwards.			
<i>Distrib.</i> W. and S. Europe to W. Asia.			
<i>Sp.</i> Cliffs near Margate	1810	W. Middleton	W. Middleton
Claygate, Surrey	1843	H. C. Watson	S. Hailstone
Queenstown, co. Cork	1894	R. A. Phillips	H. J. Wilkinson
265. <i>Linum usitatissimum</i>, Linn.			
<i>Alien.</i> Common flax.			
<i>Sp.</i> Copgrove, Knaresborough, Yorks. ...	1790	J. Dalton	Rev. J. Dalton
Heslington fields, York	1801	S. Hailstone	S. Hailstone
Bowling Lane, Bradford, Yorks. ...	1809	"	"
266. <i>Radiola linoides</i>, Gmel.			
<i>Damp sandy places.</i> From Orkneys to Cornwall.			
<i>Distrib.</i> Europe (excl. Central), N. Africa.			
<i>Sp.</i> Langford Moor, Newark, Notts. ...	(1820)	W. Middleton	W. Middleton
Milthorpe and Bradford Moor, Yorks.	1810	S. Hailstone	S. Hailstone
Strensall Common, York	1882	H. J. Wilkinson	H. J. Wilkinson

GERANIACEÆ.

267. <i>Geranium sanguineum</i>, Linn.			
<i>Rocky places or limestone, and sandy shores.</i>			
From Ross, southward.			
<i>Distrib.</i> Europe, W. Asia.			
<i>Sp.</i> Hartlepool	1796	J. Dalton	Rev. J. Dalton
Hildenley Wood, Malton, Yorks. ...	(1800)	W. Middleton	W. Middleton
Hartlepool	1799	S. Hailstone	S. Hailstone
Gordale, Yorks.	1801	"	"
Thorp Arch Woods, Yorks. ...	1832	"	"
Fleetwood, Lanc,	July 22, 1842	"	"

268. *Geranium phæum*, Linn.

Alien.

	DATE.	COLLECTOR.	HERBARIUM.
<i>Sp.</i> Near Richmond, Yorks.	1796	J. Dalton	Rev. J. Dalton
Beckfoot Lane, Bingley, Yorks. ...	1800	S. Hailstone	S. Hailstone
Near Settle	(1840)	J. Tatham	,,

269. *Geranium sylvaticum*, Linn.

Copses, meadows, etc Stafford to Caithness.

Distrib. Europe (Arctic), W. Asia.

<i>Sp.</i> Woods going to the Strid, at Bolton, Yorks.	1799	S. Hailstone	S. Hailstone
Malham Tarn, Yorks.	1808	,,	,,
Middleton-in-Teesdale	1824	,,	,,
Mulgrave Woods, N.E. Yorks ...	1824	W. Middleton	W. Middleton
Wensleydale	(1820)	,,	,,

270. *Geranium pratense*, Linn.

Crane's-bill. *Meadows, etc.* Aberdeen,
southward.

Distrib. Europe (Arctic), Siberia.

<i>Sp.</i> Clifton Ings, York	1840	O. A. Moore	Moore
Copgrove, Yorks.	1790	J. Dalton	Rev. J. Dalton
York... ..	1800	W. Middleton	W. Middleton

271. *Geranium pyrenai- cum*, Linn.

Meadows, etc. From Perth, southward.

Distrib. Europe, N. Africa, W. Asia.

<i>Sp.</i> Tunbridge	1830	Prof. Henslow	Rev. J. Dalton
Battersea Fields	1800	J. Dalton	,,
Kirkham, Yorks.	1810	W. Middleton	W. Middleton
Near the Thames, Chelsea	1810	,,	,,

272. *Geranium rotundi- folium*, Linn.

Waste places. S. Wales, southward.

Distrib. Europe, N. Africa, etc.

<i>Sp.</i> St. Vincent's Rocks, Bristol ...	(1810)	W. Middleton	W. Middleton
Wick Lane, between Bristol and Brislington	1841	Miss Worsley.	S. Hailstone

	DATE.	COLLECTOR.	HERBARIUM.
273. Geranium molle, Linn.			
<i>Pastures, etc.</i> Shetlands to Cornwall.			
<i>Distrib.</i> Europe, N. Africa, etc.			
<i>Sp.</i> Copgrove, Yorks.	1790	J. Dalton	Rev. J. Dalton
Boston Spa	1820	S. Hailstone	S. Hailstone
274. Geranium pusillum, Linn.			
<i>Hedge banks, etc.</i> Aberdeen, southward.			
<i>Distrib.</i> Europe, N. Africa, etc.			
<i>Sp.</i> Battersea Fields	(1820)	W. Middleton	W. Middleton
Copgrove, Yorks. (sub. nom. <i>rotundifolium</i>)	1790	J. Dalton	Rev. J. Dalton
275. Geranium dissectum, Linn.			
<i>Waste places.</i> From Orkney, southward.			
<i>Distrib.</i> Europe, N. Africa, etc.			
<i>Sp.</i> Horton Lane, Bradford, Yorks. ...	1810	S. Hailstone	D. Hailstone
Ripon	1800	J. Dalton	Rev. J. Dalton
276. Geranium columbinum, Linn.			
<i>Dry copses, etc.</i> From Forfar, southward.			
<i>Sp.</i> Hildenley Woods, Malton, Yorks. ...	1820	W. Middleton	W. Middleton
Old Malton Mill, Yorks.	1820	"	"
Ripon	(1800)	J. Dalton	Rev. J. Dalton
Tarn Lane, Giggleswick, Yorks. ...	1840	J. Howson	S. Hailstone
Lane leading out of Clifford Lane to Chestnut Grove, Boston Spa ...	1840	S. Hailstone	"
277. Geranium lucidum, Linn.			
<i>Walls and dry banks.</i> From Orkney, southward.			
<i>Distrib.</i> Europe, N. Africa, etc.			
<i>Sp.</i> In Craven plentifully, upon the walls at Clarkhill, near Whalley ...	1807	S. Hailstone	S. Hailstone
Malham, Yorks.	1820	"	"
Richmond, Yorks.	1800	J. Dalton	Rev. J. Dalton
Fountains Abbey, Yorks.	1810	W. Middleton	W. Middleton
Glanmire, co. Cork	1895	R. A. Phillips	H. J. Wilkinson

278. *Geranium Robertianum*, Linn.

Waste places. From Orkney, southward.

Distrib. Europe (Arctic), N. Africa.

<i>Sp.</i>	York	...	...	...	...	1820	W. Middleton	W. Middleton
	Copgrove, Knaresborough	...	...			1790	J. Dalton	Rev. J. Dalton

279. *Erodium cicutarium*, L'Herit.

Waste places. Very common near the sea.

Distrib. Europe, N. Africa, Siberia,
W. Asia.

<i>Sp.</i>	Sea-shore, Coatham, N.E. Yorks.	...				1799	S. Hailstone	S. Hailstone
	Thirsk, N. Yorks.	...	...	...		1806	"	"
	Bootle, Lanc.	...	...	...		1805	"	"
	Copgrove, Knaresboro', Yorks.	...				1790	J. Dalton	Rev. J. Dalton

280. *Erodium moschatum*, L'Herit.

Waste places. Anglesea to Cornwall.

Distrib. Europe, N. Africa, W. Asia.

<i>Sp.</i>	Near Aberystwith, Cardigan	...				(1810)	W. Middleton	W. Middleton
	Do.	...	...	...		1820	J. Dalton	Rev. J. Dalton

281. *Erodium maritimum*, L'Herit.

Sandy places near the sea. From Wigton, southward.

Distrib. W. Europe, from France to Italy.

<i>Sp.</i>	From the beach near Aberystwith	...				1820	W. Middleton	W. Middleton
	Dawlish, Devonshire	...	...			(1840)	Miss Stovin	S. Hailstone
	Near Llandudno	...	...	...		1884	H. Fisher	H. J. Wilkinson

282. *Oxalis acetosella*, Linn.

Woods and shady places. Orkneys to Channel Islands.

Distrib. Europe (Arctic), N. Africa,
N.W. Asia.

<i>Sp.</i>	Copgrove, near Knaresborough	...				1790	J. Dalton	Rev. J. Dalton
	York	...	...	...	...	1806	S. Hailstone	S. Hailstone
	Langwith, near York	...	...			1840	O. A. Moore.	Moore

283. *Oxalis corniculata*, Linn.

Waste shady places. (Alien.)

	DATE.	COLLECTOR.	HERBARIUM.
Sp. Devonshire	(1840)	Dr. Emerson	S. Hailstone
Les Vaux, Jersey	1845	J. Dickson	,,

284. *Oxalis stricta*, Linn.

(Alien.) Waste shady places.

Sp. Bideford, N. Devon... ..	1849	G. Maw.	S. Hailstone
Nocton, Lincolnshire	(1840)	Miss Stovin	,,
Langeliffe, near Settle	1831	J. Tatham	,,

285. *Impatiens noli-me-tangere*, Linn.

Moist woods, etc., mountainous districts.

North Wales.

Distrib. Europe, Siberia, W. Asia.

Sp. Studley Woods and Fountains Abbey, Yorkshire	1790	R. Teesdale	Rev. J. Dalton
Studley Woods do.	(1800)	W. Brunton	,,
Coniston Water	1804	S. Hailstone	S. Hailstone
Plentiful in the wood on the left of the footpath as you enter to go to Scale Force	Sept., 1836	S. Hailstone	,,

ILICINEÆ.

286. *Ilex aquifolium*, Linn.

Holly. *Copses and woods.* From Caithness, southward.

Distrib. Europe, from S. Norway to Turkey, W. Asia.

Sp. Copgrove, nr. Knaresborough, Yorks.	1790	J. Dalton	Rev. J. Dalton
Beckdale, Helmsley, Yorks. ...	1883	H. J. Wilkinson	H. J. Wilkinson

CELASTRINEÆ.

287. *Euonymus europæus*, Linn.

Spindle Tree. *Woods and hedges.* From
Roxburgh, southward.

Distrib. Europe to Caucasus, N. Africa,
etc.

Sp. Copgrove, nr. Knaresborough, Yorks.
Hedges between Tadcaster and York
Dodgesglen, Cork

DATE.

COLLECTOR.

HERBARIUM.

1790

J. Dalton

Rev. J. Dalton

1820

S. Hailstone

S. Hailstone

1895

R. A. Phillips

H. J. Wilkinson

288. *Staphylea pinnata*, Linn.

Alien.

Sp. From hedges, Pontefract, Yorks. ...
'Ex hort.' Hailstone MS. Cat, Yorks.

(1820)

W. Middleton

W. Middleton

,,

,,

,,

RHAMNEÆ.

289. *Rhamnus catharticus*, Linn.

Buckthorn. *Woods and hedges.* From
Westmoreland, southward.

Distrib. Europe, N. Africa, Siberia.

Sp. Mackershaw Wood, near Ripon ...
Askham Bogs, York
Kelso, near Settle, Yorks.

1790

J. Dalton

Rev. J. Dalton

1810

W. Middleton

W. Middleton

1832

S. Hailstone

S. Hailstone

290. *Rhamnus frangula*, Linn.

Woods and hedges. From Ayr, southward.

Distrib. Europe, N. Africa, Siberia.

Sp. Askham Bogs, York
Langford Moor, Newark, Notts. ...
Skipwith, near Selby, Yorks. ...

1806

S. Hailstone

S. Hailstone

1820

W. Middleton

W. Middleton

1895

H. J. Wilkinson

H. J. Wilkinson

SAPINDACEÆ.

	DATE.	COLLECTOR.	HERBARIUM.
291. <i>Acer pseudo-platanus</i>, Linn.			
<i>Denizen.</i> Sycamore.			
<i>Sp.</i> Copgrove, nr. Knaresborough, Yorks.	1790	J. Dalton	Rev. J. Dalton
York	1806	S. Hailstone	S. Hailstone
292. <i>Acer campestre</i>, Linn.			
Small-leaved Maple. <i>Woods and hedges.</i>			
From Durham, southward.			
<i>Distrib.</i> Europe, from Denmark, southward, N.W. Asia.			
<i>Sp.</i> From Copgrove, near Knaresborough	1790	J. Dalton	Rev. J. Dalton
In the hedges about Bolton, near			
Bradford, Yorks.	1820	S. Hailstone	S. Hailstone



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